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NEWS 1		Web Page for STN Seminar Schedule - N. America
NEWS 2	DEC 01	ChemPort single article sales feature unavailable
NEWS 3	APR 03	CAS coverage of exemplified prophetic substances enhanced
NEWS 4	APR 07	STN is raising the limits on saved answers
NEWS 5	APR 24	CA/CAplus now has more comprehensive patent assignee information
NEWS 6	APR 26	USPATFULL and USPAT2 enhanced with patent assignment/reassignment information
NEWS 7	APR 28	CAS patent authority coverage expanded
NEWS 8	APR 28	ENCOMPLIT/ENCOMPLIT2 search fields enhanced
NEWS 9	APR 28	Limits doubled for structure searching in CAS REGISTRY
NEWS 10	MAY 08	STN Express, Version 8.4, now available
NEWS 11	MAY 11	STN on the Web enhanced
NEWS 12	MAY 11	BEILSTEIN substance information now available on STN Easy
NEWS 13	MAY 14	DGENE, PCTGEN and USGENE enhanced with increased limits for exact sequence match searches and introduction of free HIT display format
NEWS 14	MAY 15	INPADOCDB and INPAFAMDB enhanced with Chinese legal status data
NEWS 15	MAY 28	CAS databases on STN enhanced with NANO super role in records back to 1992
NEWS 16	JUN 01	CAS REGISTRY Source of Registration (SR) searching enhanced on STN
NEWS 17	JUN 26	NUTRACEUT and PHARMAML no longer updated
NEWS 18	JUN 29	IMSCOPROFILE now reloaded monthly
NEWS 19	JUN 29	EPFULL adds Simultaneous Left and Right Truncation (SLART) to AB, MCLM, and TI fields
NEWS 20	JUL 09	PATDPAFULL adds Simultaneous Left and Right Truncation (SLART) to AB, CLM, MCLM, and TI fields
NEWS 21	JUL 14	USGENE enhances coverage of patent sequence location (PSL) data
NEWS 22	JUL 14	CA/CAplus to be enhanced with new citing references features
NEWS 23	JUL 16	GBFULL adds patent backfile data to 1855

NEWS EXPRESS MAY 26 09 CURRENT WINDOWS VERSION IS V8.4,
AND CURRENT DISCOVER FILE IS DATED 06 APRIL 2009.

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* * * * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 20:09:47 ON 20 JUL 2009

=> file reg
COST IN U.S. DOLLARS SINCE FILE ENTRY TOTAL SESSION
FULL ESTIMATED COST 0.22 0.22

FILE 'REGISTRY' ENTERED AT 20:09:57 ON 20 JUL 2009
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 19 JUL 2009 HIGHEST RN 1165441-73-5
DICTIONARY FILE UPDATES: 19 JUL 2009 HIGHEST RN 1165441-73-5

New CAS Information Use Policies, enter HELP USAGETERMS for details.

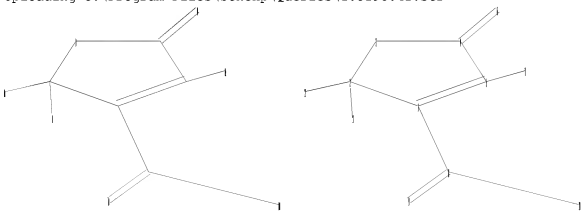
TSCA INFORMATION NOW CURRENT THROUGH January 9, 2009.

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=>
Uploading C:\Program Files\Stnexp\Queries\10519804f.str



chain nodes :
6 7 8 9 10 11 12

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ring nodes :
1  2  3  4  5
chain bonds :
1-8  2-11  2-12  4-6  5-7  8-9  8-10
ring bonds :
1-2  1-5  2-3  3-4  4-5
exact/norm bonds :
1-2  1-5  2-3  2-12  3-4  4-5  4-6
exact bonds :
1-8  2-11  5-7
normalized bonds :
8-9  8-10


Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:CLASS  7:CLASS  8:CLASS  9:CLASS
10:CLASS  11:CLASS  12:CLASS
Generic attributes :
12:
Number of Carbon Atoms : 7 or more




L1      STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1                STR
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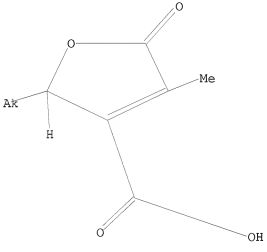


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Structure attributes must be viewed using STN Express query preparation.


=> s l1 full
FULL SEARCH INITIATED 20:10:14 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -     1886 TO ITERATE

100.0% PROCESSED     1886 ITERATIONS                                16 ANSWERS
SEARCH TIME: 00.00.01

L2            16 SEA SSS FUL L1
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=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   185.88     186.10

FILE 'CAPLUS' ENTERED AT 20:10:18 ON 20 JUL 2009
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FILE COVERS 1907 - 20 Jul 2009  VOL 151 ISS 4
FILE LAST UPDATED: 19 Jul 2009  (20090719/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED:  Jun 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE:  Jun 2009

CAplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2009.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate
substance identification.

The ALL, BIB, MAX, and STD display formats in the CA/CAplus family
of databases will soon be updated to include new citing references
information.  This enhancement may impact record import into
database management software.  For additional information, refer
to NEWS 22.

=> s l2 full
L3          53 L2

=> d ibib abs hitstr tot
```

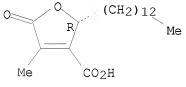
L3 ANSWER 1 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:840348 CAPLUS
DOCUMENT NUMBER: 147:371328
TITLE: Separation of a mixture of paraconic acids from Cetraria islandica (L.) Ach. employing a fluorous tag-catch and release strategy
AUTHOR(S): Horhant, David; Le Lamer, Anne-Cecile; Boustie, Joeel; Uriac, Philippe; Gouault, Nicolas
CORPORATE SOURCE: UFR Sciences Pharmaceutiques et Biologiques, Universite de Rennes 1, Rennes, 35043, Fr.
SOURCE: Tetrahedron Letters (2007), 48(34), 6031-6033
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 147:371328

AB A light-fluorous catch and release approach application has been designed to the separation of a mixture of three paraconic acids extracted from the Island moss (Cetraria islandica (L.) Ach.). The (+)-protolichesterinic acid was caught and released via a Michael/retro-Michael addition sequence with a fluorous thiol, while the resulting two other compds. were classically separated, allowing the isolation of (+)-roccellaric acid for the first time in this lichen.

IT 70579-62-3P, (+)-Lichesterinic acid
RL: BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(separation of a mixture of paraconic acids from Cetraria islandica employing a fluorous tag-catch and release strategy)

RN 70579-62-3 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.



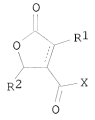
REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:60242 CAPLUS
DOCUMENT NUMBER: 140:111267
TITLE: Preparation of γ-butyrolactone-4-carboxylate derivatives as inhibitors of fatty acid synthase
INVENTOR(S): Kuhadja, Francis P.; Medghalchi, Susan M.; Thupari, Jagan N.; Townsend, Craig A.; McFadden, Jill M.
PATENT ASSIGNEE(S): Fasgen, Llc., USA; The Johns Hopkins University
SOURCE: PCT Int. Appl., 57 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004006835	A2	20040122	WO 2003-US20960	20030701
WO 2004006835	A3	20040722		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2491183	A1	20040122	CA 2003-2491183	20030701
AU 2003248810	A1	20040202	AU 2003-248810	20030701
EP 1534263	A2	20050601	EP 2003-764343	20030701
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005533107	T	20051104	JP 2004-521521	20030701
CN 1705478	A	20051207	CN 2003-818369	20030701
IN 2004KN02001	A	20070309	IN 2004-KN2001	20041229
US 20060241177	A1	20061026	US 2006-519804	20060519
IN 2008KN02395	A	20090123	IN 2008-KN2395	20080613

PRIORITY APPLN. INFO.:	US 2002-392809P	P	20020701
	WO 2003-US20960	W	20030701
	IN 2004-KN2001	A3	20041229

OTHER SOURCE(S): MARPAT 140:111267
GI



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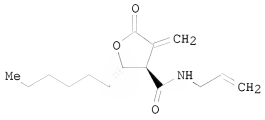


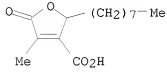
II

AB The title compds. I [R1 = H, (cyclo)alkyl, alkenyl, (alkyl)aryl, etc.; R2 = (cyclo)alkyl, alkenyl, (alkyl)aryl, etc.; X = OR3 or NHR3, where R3 = H, (cyclo)alkyl, alkenyl, (alkyl)aryl, etc.] were prepared as inhibitors of fatty acid synthase and neuropeptide-Y for weight loss, anti-microbial and anti-cancer applications. Thus, reaction of (±)-α-methylene-γ-butyrolactone-5-hexyl-4-carboxylic acid with allylamine yielded compound II. The latter inhibits human fatty acid synthase with IC50 = 81 μg/mL.

IT 647830-53-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of γ-butyrolactone carboxylate derivs. as inhibitors of fatty acid synthase)

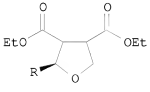
RN 647830-53-3 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-2-octyl-5-oxo- (CA INDEX NAME)

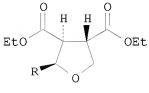


REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:4431 CAPLUS
DOCUMENT NUMBER: 138:254998
TITLE: Vicinal dianion of triethyl ethanetricarboxylate: syntheses of (±)-lichesterinic acid, (±)-phaseolinic acid, (±)-nephromopsinic acid, (±)-rocellaric acid, and (±)-dihydroprotolichesterinic acid
AUTHOR(S): Pohmakotr, Manat; Harnying, Wacharee; Tuchinda, Patoomratana; Reutrakul, Vichai
CORPORATE SOURCE: Department of Chemistry, Faculty of Science, Mahidol University, Bangkok, 10400, Thailand
SOURCE: Helvetica Chimica Acta (2002), 85(11), 3792-3813
CODEN: HCACAV; ISSN: 0018-019X
PUBLISHER: Verlag Helvetica Chimica Acta
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 138:254998
GI



I



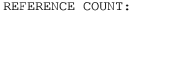
II

AB The vicinal dianion derived from tri-Et ethanetricarboxylate reacted regioselectively with aldehydes and ketones at C(β) to provide paraconic acid derivs. I [R = 4-MeOC6H4, Me3C, Me(CH2)4, etc.] in moderate to high yields as mixts. of diastereoisomers. The paraconic acid derivs. II [R = Me(CH2)n, n = 4, 12] were utilized as the starting materials for the syntheses of (±)-lichesterinic acid, (±)-phaseolinic acid, (±)-nephromopsinic acid, (±)-rocellaric acid, and (±)-dihydroprotolichesterinic acid.

IT 493-47-0P, (±)-Lichesterinic acid
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of (±)-lichesterinic acid, (±)-phaseolinic acid, (±)-nephromopsinic acid, (±)-rocellaric acid, and (±)-dihydroprotolichesterinic acid from γ-lactones derived from lactonization of carbonyl compds. with tri-Et ethanetricarboxylate)

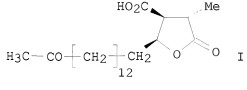
RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1999:665856 CAPLUS
DOCUMENT NUMBER: 132:33194
TITLE: A Revised Structure for (-)-Dihydropertusaric Acid, a γ-Butyrolactone Acid from the Lichen Punctelia microsticta
AUTHOR(S): Maier, Marta S.; Gonzalez Marimon, Diego I.; Stortz, Carlos A.; Adler, Monica T.
CORPORATE SOURCE: Departamento de Química Organica and Departamento de Ciencias Biologicas, Facultad de Ciencias Exactas y Naturales, Buenos Aires, 1428, Argent.
SOURCE: Journal of Natural Products (1999), 62(11), 1565-1567
CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



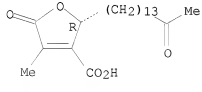
I

AB The γ-butyrolactone acid, (-)-dihydropertusaric acid (I), and two known compds., (-)-isomuronic acid and the tridepside gyrophoric acid, were isolated from the lichen Punctelia microsticta. The structure and stereochem. of I were determined on the basis of spectroscopic evidence and mol. modeling. Spectroscopic and phys. data of I were identical with those of a previously isolated compound from the lichen Pertusaria albescens which had been reported with a different relative configuration.

IT 70579-66-7P, (-)-Isomuronic acid
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(isolation, mol. structure, conformation, and revised configuration for (-)-dihydropertusaric acid, a γ-butyrolactone acid from the lichen Punctelia microsticta)

RN 70579-66-7 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-(14-oxopentadecyl)-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.



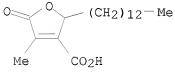
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1999:561920 CAPLUS
DOCUMENT NUMBER: 131:226128
TITLE: Some lichen products have antimicrobial activity
AUTHOR(S): Garcia Rowe, J.; Garcia Gimenez, M. D.; Saenz Rodriguez, M. T.
CORPORATE SOURCE: Lab. Vegetal Biology, Faculty Pharmacy, Univ. Seville, Seville, Spain
SOURCE: Zeitschrift fuer Naturforschung, C: Journal of Biosciences (1999), 54(7/8), 605-609
CODEN: ZNCBDA; ISSN: 0341-0382
PUBLISHER: Verlag der Zeitschrift fuer Naturforschung
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Antimicrobial activity in some lichens from south Spain was studied. Some lichenical substances are also identified. The structures of all compds. were elucidated by phys., spectral and chemical methods. A very high activity against Gram-pos. bacteria was observed in lichens containing usnic acid.

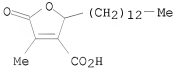
IT 493-47-0P, Lichesteric acid
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)
(lichen products with antimicrobial activity)

RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

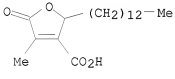
L3 ANSWER 6 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1995:834162 CAPLUS
DOCUMENT NUMBER: 123:275351
ORIGINAL REFERENCE NO.: 123:48943a,48946a
TITLE: Screening of tissue cultures and thalli of lichens and some of their active constituents for inhibition of tumor promoter-induced Epstein-Barr virus activation
AUTHOR(S): Yamamoto, Yoshikazu; Miura, Yasutaka; Kinoshita, Yasuhiro; Higuchi, Masako; Yamada, Yasuyuki; Murakami, Akira; Ohigashi, Hajime; Koshimizu, Koichi
CORPORATE SOURCE: Central Res. Inst., Nippon Paint Co., Ltd., Osaka, 572, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1995), 43(8), 1388-90
CODEN: CPBTAL; ISSN: 0009-2363
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Inhibition of tumor promoter-induced Epstein-Barr virus (EBV) activation was screened using tissue culture and thallus exts. of lichens. Usnea longissima ACH. thallus and Cetraria ornate Muell. Arg. tissue culture showed strong inhibitor activity. The authors identified (+)-usnic acid (1), barbatic acid (2), diffractaic acid (3), 4-O-demethylbarbatic acid (4), and evernic acid (5) as inhibitors of EBV activation from the U. longissima thallus. Of these compds., (+)-usnic acid exhibited the highest inhibitory activity (IC50 = 1.0 μM).
IT 493-47-0, Lichesterinic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(screening in tissue cultures and thalli of lichens and some of their active constituents for inhibition of tumor promoter-induced Epstein-Barr virus activation)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 7 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1995:571012 CAPLUS
DOCUMENT NUMBER: 122:306540
ORIGINAL REFERENCE NO.: 122:55533a,55536a
TITLE: Inhibitor of epstein-barr virus expression comprising usnic acid and lichesterinic acid derivatives
INVENTOR(S): Yamamoto, Yoshikazu; Miura, Yasutaka; Kinoshita, Yasuhiro; Ohigashi, Hajime; Koshimizu, Koichi
PATENT ASSIGNEE(S): Nippon Paint Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 6 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
EP 646373	A2	19950405	EP 1994-113368		19940826
EP 646373	A3	19950726			
R: DE, FR, GB					
JP 07112931	A	19950502	JP 1994-201881		19940826
PRIORITY APPLN. INFO.:			JP 1993-212632	A	19930827
			JP 1993-212673	A	19930827

OTHER SOURCE(S): MARPAT 122:306540
AB Inhibitors of epstein-barr virus expression comprise usnic acid and lichesterinic acid derivs. (Markush structure given). Epstein-barr virus in human lymphoid Raji cells were inhibited by usnic acid (5x10-5) at the rate of 99%.
IT 493-47-0, Lichesterinic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitor of epstein-barr virus expression)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



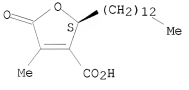
L3 ANSWER 8 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1995:423858 CAPLUS
DOCUMENT NUMBER: 122:255757
ORIGINAL REFERENCE NO.: 122:46377a,46380a
TITLE: In vitro inhibition of 5-lipoxygenase by protolichesterinic acid from Cetraria islandica
AUTHOR(S): Ingolfsdottir, K.; Breu, W.; Huneck, S.; Gudjonsdottir, G. A.; Mueller-Jakic, B.; Wagner, H.
CORPORATE SOURCE: Dept. of Pharmacy, University of Iceland, Reykjavik, 101, Iceland
SOURCE: Phytomedicine (1994), 1(3), 187-91
CODEN: PYTOEY; ISSN: 0944-7113
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The aliphatic α-methylene-γ-lactone (+)-protolichesterinic acid, isolated from Cetraria islandica, has been shown to exhibit inhibitory effects on the enzyme 5-lipoxygenase in an in vitro assay in which porcine leukocytes are used as a source of the enzyme system. The isomeric compds. (+)-lichesterinic acid and (-)-lichesterinic acid, prepared from (+)-protolichesterinic- and (-)-allo-protolichesterinic acids, resp., exhibited anti-5-lipoxygenase activity of the same order of magnitude. (+)-Me lichesterinate, however, was inactive. It was shown that despite its lipophilic nature, protolichesterinic acid is extractable into an aqueous medium, the concentration being dependent on the length of extraction

IT 22800-25-5P, (-)-Lichesterinic acid 70579-62-3P, (+)-Lichesterinic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(in vitro inhibition of lipoxygenase by protolichesterinic acid from Cetraria islandica)

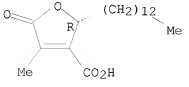
RN 22800-25-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2S)- (CA INDEX NAME)

Absolute stereochemistry.



RN 70579-62-3 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.



L3 ANSWER 9 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1994:567 CAPLUS
DOCUMENT NUMBER: 120:567
ORIGINAL REFERENCE NO.: 120:135a,138a
TITLE: Acne-controlling antibacterial agents containing usnic acids or lichesterinic acids
INVENTOR(S): Higuchi, Masako; Miura, Yasutaka; Kinoshita, Yasuhiro; Yamamoto, Yoshikazu; Mayama, Shigeyuki
PATENT ASSIGNEE(S): Nippon Paint Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

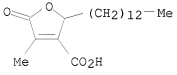
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05246822	A	19930924	JP 1992-84686	19920307

PRIORITY APPLN. INFO.: JP 1992-84686 19920307

AB Antibacterial agents against Propionibacterium acnes contain usnic acids or lichesterinic acids as active ingredients. Lichesterinic acid, protolichesterinic acid, and usnic acid inhibited the growth of P. acnes in vitro.

IT 493-47-0, Lichesterinic acid
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antibacterial activity of, against Propionibacterium acnes, for acne treatment)

RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 10 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1993:445255 CAPLUS
DOCUMENT NUMBER: 119:45255
ORIGINAL REFERENCE NO.: 119:8151a,8154a
TITLE: Studies on Chilean lichens. XVII. Metabolites of Cetraria chlorophylla
AUTHOR(S): Garbarino, Juan A.; Quilhot, Wanda; Piovano, Marisa; Figueroa, Yasmin; Torres, Pamela
CORPORATE SOURCE: Dep. Quim., Univ. T. F. Santa Maria, Valparaiso, Chile
SOURCE: Revista Latinoamericana de Quimica (1991), 22(3), 53-4
CODEN: RLAQA8; ISSN: 0370-5943
DOCUMENT TYPE: Journal
LANGUAGE: Spanish

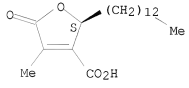
AB Lichesterinic acid, atranorin, and peroxyergosterol were isolated from C. chlorophylla, a lichen from Continental Chile. The latter compound is reported for the first time for the Cetraria genus.

IT 22800-25-5
RL: BIOL (Biological study)
(of Cetraria chlorophylla from Chile)

RN 22800-25-5 CAPLUS

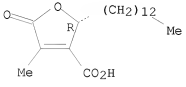
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2S)- (CA INDEX NAME)

Absolute stereochemistry.



L3 ANSWER 11 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1993:424317 CAPLUS
DOCUMENT NUMBER: 119:24317
ORIGINAL REFERENCE NO.: 119:4432h,4433a
TITLE: Chemical examination of South Indian lichens: Lobaria japonica (Zahlbr) Asah and Heterodermia leucomela Borri (Fee') Swinsc & Krog
AUTHOR(S): Ramesh, P.; Baig, E. Shere Ali
CORPORATE SOURCE: Dep. Nat. Prod. Chem., Kamaraj Univ., Madurai, 625 021, India
SOURCE: Indian Journal of Heterocyclic Chemistry (1993), 2(3), 147-8
CODEN: IJCHEI; ISSN: 0971-1627
DOCUMENT TYPE: Journal
LANGUAGE: English
AB From the South Indian lichens L. japonica and H. leucomela, atranorin, salazinic acid, zeorin, (+)-lichesterinic acid, and lecanoric acid were isolated.
IT 70579-62-3, (+)-Lichesterinic acid
RL: BIOL (Biological study)
(of lichens, of India)
RN 70579-62-3 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.



L3 ANSWER 12 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1993:260713 CAPLUS
DOCUMENT NUMBER: 118:260713
ORIGINAL REFERENCE NO.: 118:45203a,45206a
TITLE: Topical preparations containing lichesteric acid
INVENTOR(S): Koiso, Ichiro; Matsugami, Michio; Katagiri, Takayuki; Yokoyama, Koji; Oonuki, Keiko; Nakano, Hiroyuki
PATENT ASSIGNEE(S): Pola Kasei Kogyo Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

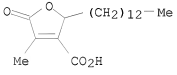
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05058872	A	19930309	JP 1991-247071	19910830
PRIORITY APPLN. INFO.:			JP 1991-247071	19910830

AB Skin-lightening topical prepns. contain lichesteric acid (I). I at 10-3% inhibited melanin formation in B-16 melanoma cells by 50.3%. A skin cream containing I was formulated.

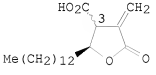
IT 493-47-0, Lichesteric acid
RL: BIOL (Biological study)
(skin-lightening cosmetics containing, melanin formation-inhibiting)

RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 13 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1992:630101 CAPLUS
DOCUMENT NUMBER: 117:230101
ORIGINAL REFERENCE NO.: 117:39701a,39704a
TITLE: Contribution to the chemistry of proto- and allo-protolichesterinic acids
AUTHOR(S): Huneck, Siegfried; Takeda, Reiji
CORPORATE SOURCE: Inst. Pflanzenbiochem., Halle/Saale, D-O-4050, Germany
SOURCE: Zeitschrift fuer Naturforschung, B: Chemical Sciences (1992), 47(6), 842-54
CODEN: ZNBSEN; ISSN: 0932-0776
DOCUMENT TYPE: Journal
LANGUAGE: German
GI

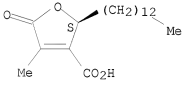


I, 3?
II, 3?

AB The isolation and spectroscopic characterization of (-)-allo-protoichesterinic acid (I) from Cetraria komarovii is described. Protolichesterinic acid (II) and I were transformed into numerous nitrogen-containing derivs. and the isomerization of the dihydro acids was investigated.

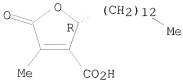
IT 22800-25-5, (-)-Lichesterinic acid
RL: BIOL (Biological study)
(of Cetraria komarovii)
RN 22800-25-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2S)- (CA INDEX NAME)

Absolute stereochemistry.



IT 70579-62-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and chemical transformation reactions of)
RN 70579-62-3 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.

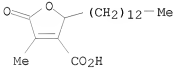

O
O
R
(CH2)12
Me
Me
CO2H

L3 ANSWER 14 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1992:462532 CAPLUS
DOCUMENT NUMBER: 117:62532
ORIGINAL REFERENCE NO.: 117:10794h,10795a
TITLE: Inhibitory effects of plant secondary metabolites on cytotoxic activity of polymorphonuclear leukocytes
AUTHOR(S): Kinoshita, Kaoru; Morikawa, Kaoru; Fujita, Masahiko; Natori, Shinsaku
CORPORATE SOURCE: Meiji Coll. Pharm., Tanashi, 188, Japan
SOURCE: Planta Medica (1992), 58(2), 137-45
CODEN: PLMEAA; ISSN: 0032-0943
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The inhibitory effects of 151 natural products, representing most of the frequently occurring types, on the cytotoxicity towards MM2 tumor cells of polymorphonuclear leukocytes (PMN) induced by TAK, a polysaccharide immunomodulator, were examined Forty-two compds. inhibited the TAK-induced activation of PMN. Among them some naturally occurring quinones and various alkaloids (nicotine, Cinchona alkaloids, isoquinoline alkaloids such as cepharanthine, and indole alkaloids such as ajmaline) exhibited potent inhibitory effects. Using the inhibition assay for monitoring the exts. of Hydrangea Dulcis folium, Scopoliae rhizoma, Cinchona cortex, Magnoliae cortex, Stephania tuber, and Rauwolfia radix were analyzed to characterize the active constituents.

IT 493-47-0, Lichesterinic acid
RL: BIOL (Biological study)
(cytotoxic activity of polymorphonuclear leukocytes toward neoplasm response to)

RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 15 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1991:489130 CAPLUS
DOCUMENT NUMBER: 115:89130
ORIGINAL REFERENCE NO.: 115:15247a,15250a
TITLE: The chemical constituents of four lichens from China
AUTHOR(S): Li, Bo; Lin, Zhongwen; Sun, Handong
CORPORATE SOURCE: Kunming Inst. Bot., Acad. Sin., Kunming, 560204, Peop. Rep. China
SOURCE: Yunnan Zhiwu Yanjiu (1991), 13(1), 81-4
CODEN: YCWCDP; ISSN: 0253-2700
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

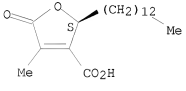
AB The following 18 compds. were isolated and identified from four lichens in China: Me 5-methyl-β-orcinolcarboxylate, orsellinic acid, everninic acid, Me orsellinate, pseudocyphellarin A and lecanoric acid from Sticta henryana Mull. Arag.; atranorin, lecanoric acid, stictic acid, norstictic acid, salazinic acid, fumarprotecetraric acid and (+)-usnic acid from Alectoria variabilis Brystrek; (-)-usnic acid, (-)-lichesterinic acid, (+)-protolichesterinic acid and friedelin from Nephromopis strachyi Mull Arg. ectocarpisma Hue; and Et hematommate and Me β-orcinolcarboxylate from Stereocaulon pomiferum Duvign. The anal. showed that N. strachyi f. ectocarpisma is very rich in antibiotic constituents, such as usnic acid and γ-lactonic acids, and that S. pomiferum can be used in producing lichen perfume.

IT 22800-25-5, (-)-Lichesterinic acid
RL: PROC (Process)
(isolation of, from lichen)

RN 22800-25-5 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2S)- (CA INDEX NAME)

Absolute stereochemistry.

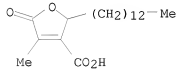


L3 ANSWER 16 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1991:404422 CAPLUS
DOCUMENT NUMBER: 115:4422
ORIGINAL REFERENCE NO.: 115:875a,878a
TITLE: High-performance liquid chromatographic method for the quantitative determination of some organic acids in lichens
AUTHOR(S): Zhou, Xinru; Kang, Xiaoyu; Ke, Yikan; Yuan, Hancheng; Da, Jun; Gao, Xiangqun
CORPORATE SOURCE: Dep. Appl. Chem., Beijing Inst. Chem. Technol., 100029, Peop. Rep. China
SOURCE: Sepu (1991), 9(2), 128-30
CODEN: SEPUER; ISSN: 1000-8713
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

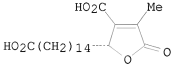
AB A HPLC method was developed for the determination of usnic acid, lichesterinic acid, and protolichesterinic acid in Cetraria lichens. Conditions for preparing standard reagents for quant. anal. by HPLC were developed as were methods for extracting usnic acid from lichen samples.

IT 493-47-0, Lichesterinic acid
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in Cetraria lichens by HPLC)

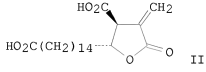
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 17 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1990:608340 CAPLUS
DOCUMENT NUMBER: 113:208340
ORIGINAL REFERENCE NO.: 113:35121a,35124a
TITLE: Two new aliphatic acids from the lichen Parmotrema praesorediosum
AUTHOR(S): David, Feeya; Elix, John A.; Wahid bin Samsudin, M.
CORPORATE SOURCE: Fac. Sci., Prince Songkla Univ., Hat Yai, 90112, Thailand
SOURCE: Australian Journal of Chemistry (1990), 43(7), 1297-300
CODEN: AJCHAS; ISSN: 0004-9425
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



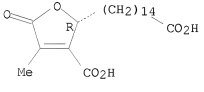
I



II

AB The new aliphatic acids, (+)-praesorediosic acid [2-(14'-carboxytetradecyl)-4-methyl-5-oxo-2,5-dihydrofuran-3-carboxylic acid] (I) and (+)-protopraesorediosic acid [2-(14'-carboxytetradecyl)-4-methylene-5-oxo-2,5-tetrahydrofuran-3-carboxylic acid] (II) have been isolated from the lichen P. praesorediosum.
IT 130342-70-0, (+)-Praesorediosic acid
RL: BIOL (Biological study)
(from Parmotrema praesorediosum, isolation and structure of)
RN 130342-70-0 CAPLUS
CN 2-Furanpentadecanoic acid, 3-carboxy-2,5-dihydro-4-methyl-5-oxo-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.

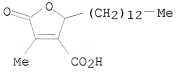


L3 ANSWER 18 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1986:417935 CAPLUS
DOCUMENT NUMBER: 105:17935
ORIGINAL REFERENCE NO.: 105:2857a
TITLE: Effect of lichesterinic acid and sarkomycin on the permeability of biological membranes
AUTHOR(S): Omarov, I. A.; Gaibov, T. D.; Akhmedov, G. I.
CORPORATE SOURCE: Azerb. Gos. Univ., Baku, USSR
SOURCE: Izvestiya Akademii Nauk Azerbaidzhanskoi SSR, Seriya Biologicheskikh Nauk (1986), (1), 106-12
CODEN: IABLAQ; ISSN: 0132-6112
DOCUMENT TYPE: Journal
LANGUAGE: Russian

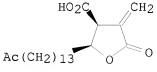
AB Lichesterinic acid (I) [493-47-0] (5 mg/kg for 10 days) and the antitumor agent sarkomycin (II) [11031-48-4] (4 mg/kg for 12 days) increased both cellular (erythrocyte) and vascular permeability to indicator substances in rats. The effects were reversible, and were greatly diminished 10 days after cessation of drug administration. The changes induced by I were less marked than those induced by II. Both I and II induced marked changes in the Na+ and K+ content of erythrocytes.

IT 493-47-0
RL: BIOL (Biological study)
(cellular and vascular permeability enhancement by)

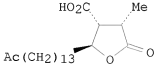
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 19 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1986:183270 CAPLUS
DOCUMENT NUMBER: 104:183270
ORIGINAL REFERENCE NO.: 104:28969a,28972a
TITLE: Lichen substances. Part 144. (-)-Allo-pertusaric acid and (-)-dihydropertusaric acid from the lichen Pertusaria albescens
AUTHOR(S): Huneck, Siegfried; Toensberg, Tor; Bohlmann, Ferdinand
CORPORATE SOURCE: Inst. Plant Biochem., Ger. Acad. Sci., Halle/Saale, 4010, Ger. Dem. Rep.
SOURCE: Phytochemistry (Elsevier) (1986), 25(2), 453-9
CODEN: PYTCAS; ISSN: 0031-9422
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



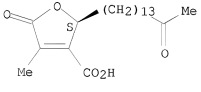
I



II

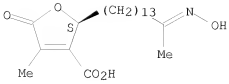
AB The structures of 2 γ-lactone carboxylic acids from the lichen P. albescens, (-)-allo-pertusaric acid (I) and (-)-dihydropertusaric acid (II), were elucidated by spectroscopic and chemical methods. From P. ophthalmiza, taraxerone and a mixture of long-chain aliphatic alcs. and fatty acids were isolated.
IT 72960-05-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactions of)
RN 72960-05-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-(14-oxopentadecyl)-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 101899-71-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 101899-71-2 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-2-[14-(hydroxyimino)pentadecyl]-4-methyl-5-oxo-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.

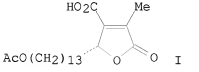

O
O
S
(CH2)13
N
OH
Me
Me
CO2H

L3 ANSWER 20 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1986:182651 CAPLUS
DOCUMENT NUMBER: 104:182651
ORIGINAL REFERENCE NO.: 104:28861a,28864a
TITLE: A high performance liquid chromatographic method for the analysis of lichen compounds from the genera Cladina and Cladonia
AUTHOR(S): Huovinen, K.; Hiltunen, R.; Von Schantz, M.
CORPORATE SOURCE: Sch. Pharm., Univ. Helsinki, Helsinki, SF-00170, Finland
SOURCE: Acta Pharmaceutica Fennica (1985), 94(3), 99-112
CODEN: APHFDO; ISSN: 0356-3456
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Reversed-phase HPLC for determination of aromatic lichen acids in Cladina and Cladonia species was done on a 250 + 4-mm inner diameter column packed with LiChrosorb RP-8, 5-μm, fitted with a 30 + 4-mm inner diameter Precolumn packed with Perisorb RP-8, 30-40-μm, with a mobile phase elution gradient of MeOH in H2O. The lichen acids were extracted with Me2CO-EtOH-DMF (40:40:20), and benzoic acid and bis(2-hexylethyl) phthalate were used as internal stds. compds. Identities were confirmed by TLC on silica gel. UV detection at 270-nm and 254 nm was used. Retention indexes were determined for the compds. and their reproducibility ranged 0.09-0.56%. Intra-assay relative standard deviation ranged 2.1-5.5% and inter-assay relative standard deviation ranged 3.1-14.9%. The method may be useful in chemotaxonomic studies of lichens, with sensitivity of the technique making micropopulation studies possible.

IT 493-47-0
RL: ANT (Analyte); ANST (Analytical study)
(determination of, in lichens by reversed-phase HPLC with UV detection)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)

L3 ANSWER 21 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1983:403006 CAPLUS
DOCUMENT NUMBER: 99:3006
ORIGINAL REFERENCE NO.: 99:595a,598a
TITLE: Structural elucidation of 13-acetoxylichesterinic and 13-acetoxyprotolichesterinic acids, two aliphatic lichen metabolites from Neuropogon trachycarpus
AUTHOR(S): Ghogomu, Raphael Tih; Bodo, Bernard
CORPORATE SOURCE: Lab. Chim. Appl. Org., Mus. Natl. Hist. Nat., Paris, 75005, Fr.
SOURCE: Phytochemistry (Elsevier) (1982), 21(9), 2355-8
CODEN: PYTCAS; ISSN: 0031-9422
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

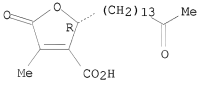


AB Examination of the lichen N. trachycarpus yielded 6 aliphatic acids related to lichesterinic acid, neuropogolic, murolic, isomuronic, and muronic acids, and 2 new compds., 13-acetoxylichesterinic and 13-acetoxyprotolichesterinic acids (I and II resp.), the structures of which were determined by chemical and spectral means.

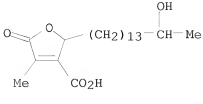
IT 70579-66-7 75716-00-6
RL: BIOL (Biological study)
(from Neuropogon trachycarpus)

RN 70579-66-7 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-(14-oxopentadecyl)-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.

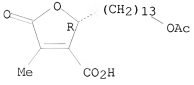


RN 75716-00-6 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-2-(14-hydroxypentadecyl)-4-methyl-5-oxo- (9CI) (CA INDEX NAME)



IT 85644-00-4
RL: BIOL (Biological study)
(from Neuropogon trachycarpus, structure of)
RN 85644-00-4 CAPLUS
CN 3-Furancarboxylic acid, 2-[13-(acetyloxy)tridecyl]-2,5-dihydro-4-methyl-5-oxo-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



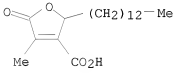
L3 ANSWER 22 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1982:420105 CAPLUS
DOCUMENT NUMBER: 97:20105
ORIGINAL REFERENCE NO.: 97:3505a,3508a
TITLE: Substitution of methyl tert-butyl ether for diethyl ether in the standardized thin-layer-chromatographic method for lichen products
AUTHOR(S): Culberson, C. F.; Johnson, A.
CORPORATE SOURCE: Dep. Bot., Duke Univ., Durham, NC, 27706, USA
SOURCE: Journal of Chromatography (1982), 238(2), 483-7
CODEN: JOCRAM; ISSN: 0021-9673
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In the common 3-developer thin-layer-chromatog. (TLC) method for the identification of lichen products, solvent system B was modified by substituting Me tert-Bu ether for Et2O because of problems of evaporation and storage of Et2O. Modified solvent B, which contains hexane-Me tert-Bu ether-HCO2H (140:72:18), has chromatog. properties nearly identical to those of unmodified solvent B, which contains hexane-Et2O-HCO2H (120:90:20). TLC was done on 12.5-cm-long Merck silica gel 60 F254 plates with atranorin and norstictic acid as internal controls. Standardized Rf data for modified solvent B are given for all major classes of lichen products. Me tert-Bu ether also is recommended for use as extraction solvent in the procedure for the hydrolysis of lichen depsides.

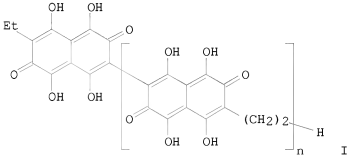
IT 493-47-0
RL: ANT (Analyte); ANST (Analytical study)
(chromatog. of, thin-layer, of lichens, solvent for)

RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 23 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1982:214247 CAPLUS
DOCUMENT NUMBER: 96:214247
ORIGINAL REFERENCE NO.: 96:35336h,35337a
TITLE: Quinones of the lichen Cetraria cucullata
AUTHOR(S): Krivoshchekova, O. E.; Maximov, O. B.; Stepanenko, L. S.; Mishchenko, N. P.
CORPORATE SOURCE: Pacific Inst. Bioorg. Chem., Far East Sci. Cent., Vladivostok, 22, USSR
SOURCE: Phytochemistry (Elsevier) (1982), 21(1), 193-6
CODEN: PYTCAS; ISSN: 0031-9422
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



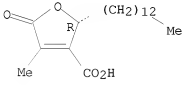
AB In addition to known compds., the monomeric and dimeric quinones I (n = 0, 1) were isolated from C. cucullata, and their structures determined by chemical and spectral methods. A third pigment was isolated in small amts. but its structure was not determined

IT 70579-62-3
RL: BIOL (Biological study)
(from Cetraria cucullata)

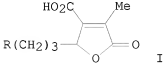
RN 70579-62-3 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.



L3 ANSWER 24 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1980:635083 CAPLUS
DOCUMENT NUMBER: 93:235083
ORIGINAL REFERENCE NO.: 93:37598h,37599a
TITLE: Structure of isomuronic and neuropogolic acids, new aliphatic acids from the lichen, Neuropogon trachycarpus
AUTHOR(S): Bodo, Bernard; Molho, Darius
CORPORATE SOURCE: Lab. Chim., Mus. Natl. Hist. Nat., Paris, 75005, Fr.
SOURCE: Phytochemistry (Elsevier) (1980), 19(6), 1117-20
CODEN: PYTCAS; ISSN: 0031-9422
DOCUMENT TYPE: Journal
LANGUAGE: French
GI



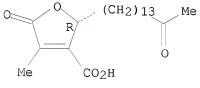
I

AB The structures of the aliphatic acids, isomuronic (I; R = Ac) and neuropogolic acid (I; R = CHOHMe), isolated from N. trachycarpus, were determined by chemical and spectral means. CD allowed the configuration of isomuronic acid to be assigned as 2R.

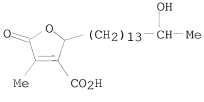
IT 70579-66-7 75716-00-6
RL: BIOL (Biological study)
(from Neuropogon trachycarpus, structure of)

RN 70579-66-7 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-(14-oxopentadecyl)-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.



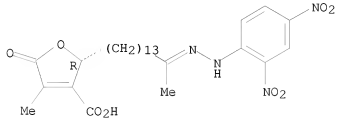
RN 75716-00-6 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-2-(14-hydroxypentadecyl)-4-methyl-5-oxo- (9CI) (CA INDEX NAME)



IT 75696-34-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 75696-34-3 CAPLUS
CN 3-Furancarboxylic acid, 2-[14-[(2,4-dinitrophenyl)hydrazono]pentadecyl]-2,5-dihydro-4-methyl-5-oxo-, (R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.

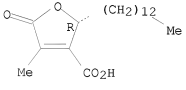


L3 ANSWER 25 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1980:617913 CAPLUS
DOCUMENT NUMBER: 93:217913
ORIGINAL REFERENCE NO.: 93:34751a,34754a
TITLE: Lichen constituents. Part 123. Chemistry of some yellow Acarospora species
AUTHOR(S): Huneck, S.
CORPORATE SOURCE: Inst. Biochem., DAW, Halle/Saale, DDR-401, Ger. Dem. Rep.
SOURCE: Lichenologist (1980), 12(2), 239-42
CODEN: LCHNB8; ISSN: 0024-2829
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Fifteen specimens of 4 Acarospora species of subgenus Xanthothallia were analyzed. All species contained (+)-rhizocarpic acid. A. gobiensis And A. schleicheri had only this compound, and A. oxytona this and (+)-lichesterinic acid. A. chlorophana Seems to exist in 2 chemical races, one with a mixture of (-)-acaranoic and (-)-acarenoic acids and the other with (+)-roccellic acid. The stereochem. and biogenesis of these compds. is briefly discussed.

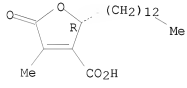
IT 70579-62-3
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of Acarospora)
RN 70579-62-3 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.

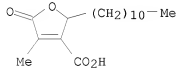


L3 ANSWER 26 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1980:579563 CAPLUS
DOCUMENT NUMBER: 93:179563
ORIGINAL REFERENCE NO.: 93:28463a,28466a
TITLE: Anti-tumor activities of some lichen products and their degradation products
AUTHOR(S): Hirayama, Teruhisa; Fujikawa, Fukujiro; Kasahara, Toshiko; Otsuka, Masako; Nishida, Noriko; Mizuno, Denichi
CORPORATE SOURCE: Kyoto Coll. Pharm., Kyoto, Japan
SOURCE: Yakugaku Zasshi (1980), 100(7), 755-9
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Anionic and cationic resins-adsorbed fractions of 44 lichens, hot water exts. of 9 lichens, and 20 lichen metabolites and their degradation products were assayed for their antitumor activity against ascitic or solid-type Ehrlich carcinoma. Among them, the adsorbed fraction of Ramalina almquistii , d-protolichesterinic acid [1448-96-0] and nephrosterinic acid [570-13-8] were effective against the solid-type Ehrlich carcinoma.
IT 70579-62-3 75232-40-5
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(antitumor activity of, from lichen)
RN 70579-62-3 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2R)- (CA INDEX NAME)

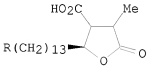
Absolute stereochemistry.



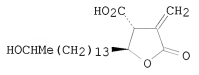
RN 75232-40-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-undecyl- (9CI) (CA INDEX NAME)



L3 ANSWER 27 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1980:124916 CAPLUS
DOCUMENT NUMBER: 92:124916
ORIGINAL REFERENCE NO.: 92:20329a,20332a
TITLE: Three new aliphatic acids from lichens of genus Parmelia (subgenus Xanthoparmelia)
AUTHOR(S): Chester, Douglas O.; Elix, John A.
CORPORATE SOURCE: Dep. Chem., Aust. Natl. Univ., Canberra, 2600, Australia
SOURCE: Australian Journal of Chemistry (1979), 32(11), 2565-9
CODEN: AJCHAS; ISSN: 0004-9425
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I, R=CHMeOH
III, R=Ac



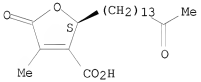
II

AB The aliphatic acids, constipatic (I), protoconstipatic (II), and dehydroconstipatic (III), were identified as constituents of various Xanthoparmelia lichens from Australia.

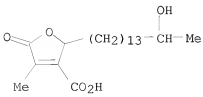
IT 72960-05-5 73036-28-9
RL: BIOL (Biological study)
(from Xanthoparmelia)

RN 72960-05-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-(14-oxopentadecyl)-, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 73036-28-9 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-2-(14-hydroxypentadecyl)-4-methyl-5-oxo- (9CI) (CA INDEX NAME)



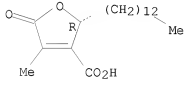
L3 ANSWER 28 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1979:435683 CAPLUS
DOCUMENT NUMBER: 91:35683
ORIGINAL REFERENCE NO.: 91:5803a,5806a
TITLE: Neodihydromurol and murolic acid, two new γ-lactonecarboxylic acids from Lecanora muralis
AUTHOR(S): Huneck, Siegfried; Schreiber, Klaus; Hoefle, Gerhard; Snatzke, Guenther
CORPORATE SOURCE: Inst. Biochem., DAW, Halle/Saale, DDR-401, Ger. Dem. Rep.
SOURCE: Journal of the Hattori Botanical Laboratory (1979), 45, 1-23
CODEN: JHBLAI; ISSN: 0073-0912
DOCUMENT TYPE: Journal
LANGUAGE: German

AB Two new aliphatic hydroxy γ-lactone carboxylic acids, (+)-neodihydromurolic acid and (+)-murolic acid, were isolated from the lichens Lecanora muralis, L. melanophthalma, and L. rubina. Spectroscopical and chemical data led to the following structures: (+)-neodihydromurolic acid, (+)-2(S)-methy-3(S)-carboxy-4(R),18(R)-dihydroxynonadecan-1→4-olide (I); and (+)-murolic acid, (+)-2-methylen-3(S)-carboxy-4(R),18(R)-dihydroxynonadecan-1→4-olide (II). The absolute configurations of (+)-nephrosteranic acid, (-)-alloprotolichesterinic acid, and (+)-nephrosterinic acid were established.

IT 70579-62-3P 70579-64-5P 70579-66-7P
70579-68-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

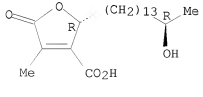
RN 70579-62-3 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.



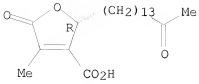
RN 70579-64-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-2-[(14R)-14-hydroxypentadecyl]-4-methyl-5-oxo-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.



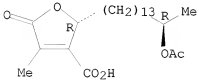
RN 70579-66-7 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-(14-oxopentadecyl)-, (2R)- (CA INDEX NAME)

Absolute stereochemistry.



RN 70579-68-9 CAPLUS
CN 3-Furancarboxylic acid, 2-[14-(acetyloxy)pentadecyl]-2,5-dihydro-4-methyl-5-oxo-, [R-(R*,R*)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

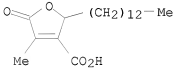


L3 ANSWER 29 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1977:546475 CAPLUS
DOCUMENT NUMBER: 87:146475
ORIGINAL REFERENCE NO.: 87:23117a,23120a
TITLE: Effect of a group of cyclopentane naphthenic derivatives on the permeability of blood capillaries in animals
AUTHOR(S): Maizelis, M. Ya.; Kruglikov, R. I.; Omarov, I. A.
CORPORATE SOURCE: Azerb. Gos. Univ. im. Kirova, Baku, USSR
SOURCE: Uchenye Zapiski - Ministerstvo Vysshego i Srednego Spetsial'nogo Obrazovaniya Azerbaidzhanskoi SSR, Seriya Biologicheskikh Nauk (1976), (1), 39-45
CODEN: UZMBDL; ISSN: 0132-7038
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB I.m. injections of a cyclopentane naphthenic acid (150 mg/kg), a cyclopentane perhydrophenanthrenic naphthenic hydrocarbon (150 mg/kg), or lichesterinic acid [493-47-0] (5 mg/kg) for 10 days increased the vascular permeability of PO43- in the capillaries of rats from the blood to tissue; however, sarcomycin [11031-48-4] had the opposite effect. In all cases vascular permeability was nearly normalized 10 days following completion of the various treatments.

IT 493-47-0
RL: PRP (Properties)
(capillary permeability increase by)

RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)

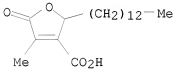


L3 ANSWER 30 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1972:511076 CAPLUS
DOCUMENT NUMBER: 77:111076
ORIGINAL REFERENCE NO.: 77:18307a,18310a
TITLE: Separation and detection of lichesterinic acids by thin-layer chromatography
AUTHOR(S): Kowalska, Maria
CORPORATE SOURCE: Wyzsza Szk. Roln., Poznan, Pol.
SOURCE: Roczniki Wyzszej Szkoly Rolniczej w Poznaniu (1971), 52, 15-22
CODEN: RWSPA2; ISSN: 0370-8020
DOCUMENT TYPE: Journal
LANGUAGE: Polish

AB A group of lichesterinic acids from Cetraria islandica and Usnea dasypoga was studied by thin-layer chromatog. The compds. were separated on silica gel or polyamide by using either a system consisting of CHCl3-MeOH-EtCOMeacetylacetone (20:10:5:1) or CHCl3-Me2CO-EtOH (8:2:2). The individual compds. were determined with 1% FeCl3 in MeOH.

IT 493-47-0D, 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, derivs.
RL: ANT (Analyte); ANST (Analytical study)
(detection of, in plant material, chromatog.)

RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



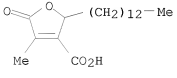
L3 ANSWER 31 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1970:506362 CAPLUS
DOCUMENT NUMBER: 73:106362
ORIGINAL REFERENCE NO.: 73:17307a,17310a
TITLE: Biosynthesis of (+)-protolichesterinic acid in Cetraria islandica
AUTHOR(S): Bloomer, James L.; Eder, W. R.; Hoffman, William Freeman
CORPORATE SOURCE: Dep. of Chem., Temple Univ., Philadelphia, PA, USA
SOURCE: Journal of the Chemical Society [Section] C: Organic (1970), (13), 1848-50
CODEN: JSOOAX; ISSN: 0022-4952
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Biosynthesis of (+)-protolichesterinic acid was studied by use of [1-14C]acetate and [1,4-14C2]succinic acid. The results support the hypothesis that aliphatic lichen acids have common precursors related to the citric acid and fatty acid cycles; however, the extremely low levels of incorporation suggest that the biosynthesis represents very minor metabolic pathways in C. islandica. The biosynthesis appears to be inoperative in winter.

IT 493-47-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)

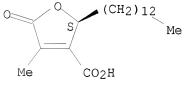


L3 ANSWER 32 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1969:77124 CAPLUS
DOCUMENT NUMBER: 70:77124
ORIGINAL REFERENCE NO.: 70:14369a,14372a
TITLE: Naturally occurring lactones and lactams. I. Absolute configuration of ranunculin, lichesterinic acid, and some lactones related to lichesterinic acid
AUTHOR(S): Boll, Per M.
CORPORATE SOURCE: Univ. Copenhagen, Copenhagen, Den.
SOURCE: Acta Chemica Scandinavica (1947-1973) (1968), 22(10), 3245-50
CODEN: ACSAA4; ISSN: 0001-5393
DOCUMENT TYPE: Journal
LANGUAGE: English

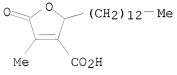
AB N.M.R. spectra have confirmed the provisional structure of ranunculin. Circular dichroism data allowed the assignment of the configuration of its aglucone to be 4S. As a result of the circular dichroism work, it was also possible to allocate configurations to the following lichen lactones: (S)-(-)-lichesterinic acid, (3R,4S)-(-)-protolichesterinic acid, (3S,4S)-(-)-alloprotolichesterinic acid, and (2R,3S,4S)-nephromopsic acid.

IT 22800-25-5
RL: PRP (Properties)
(configuration of, absolute)
RN 22800-25-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2S)- (CA INDEX NAME)

Absolute stereochemistry.



L3 ANSWER 33 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1967:497597 CAPLUS
DOCUMENT NUMBER: 67:97597
ORIGINAL REFERENCE NO.: 67:18339a,18342a
TITLE: Lichens. IV. Thin-layer chromatography of lichen substances
AUTHOR(S): Santesson, Johan
CORPORATE SOURCE: Univ. Uppsala, Uppsala, Swed.
SOURCE: Acta Chemica Scandinavica (1947-1973) (1967), 21(5), 1162-72
CODEN: ACSAA4; ISSN: 0001-5393
DOCUMENT TYPE: Journal
LANGUAGE: English
AB cf. CA 67: 51056p. The thin-layer chromatography on precoated plates of >80 lichen substances is described. 32 references.
IT 493-47-0
RL: ANT (Analyte); ANST (Analytical study)
(thin-layer chromatog. of)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



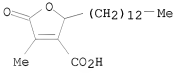
L3 ANSWER 34 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1966:475198 CAPLUS
DOCUMENT NUMBER: 65:75198
ORIGINAL REFERENCE NO.: 65:14079a-b
TITLE: Lichens. II. Thin-layer chromatography of aliphatic lichen acids
AUTHOR(S): Bendz, Gerd; Santesson, Johan; Tibell, Leif
CORPORATE SOURCE: Univ. Uppsala, Swed.
SOURCE: Acta Chemica Scandinavica (1966), 20(4), 1180-1
CODEN: ACHSE7; ISSN: 0904-213X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB cf. CA 64, 13073b. Aliphatic lichen acids were separated by thin layer chromatog. on silica gel HF, by using 40 mg. bromcresol green in 100 mL. 0.01N NaOH as the detection spray. Rf values were tabulated.Rf + 100 in solvent system, A, B, C, D; Caperatic acid, 03, 02, 01, 11; Lichesterinic acid, 73, 32, 56, X; Nephromopsinic acid, 82, 32, 54, X; Nephrosteranic acid, 82, 31, 55, X; Nephrosterinic acid, 61, 22, 43, X, Norrangiformic acid, 04, 03, 03, 49; Acaranoic acid, 68, 26, 42, X; Acarenoic acid, 48, 17, 30, X; Protolichesterinic acid, 61, 23, 43, X; Rangiformic acid, 50, 10, 36, 66; Roccellic acid, 91, 24, 60, X; X indicates that the acid travels with the secondary front; the solvents were: (A) ether-butyric acid 20:1, (B) CHCl3-propionic acid 20:1, (C) iso-Pr ether-propionic acid 20: 1, (D) CHCl3-HOAc 5:1.

IT 493-47-0, Fumaric acid, (1-hydroxytetradecyl)methyl-, γ-lactone
(chromatog. of)

RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 35 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1958:113136 CAPLUS
DOCUMENT NUMBER: 52:113136
ORIGINAL REFERENCE NO.: 52:19935g-i,19936a-i,19937a-h
TITLE: The synthesis of dl-protolichesterinic acid
AUTHOR(S): Van Tamelen, Eugene E.; Bach, Shirley Rosenberg
CORPORATE SOURCE: Univ. of Wisconsin, Madison
SOURCE: Journal of the American Chemical Society (1958), 80, 3079-86
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
OTHER SOURCE(S): CASREACT 52:113136

AB Me dl-dihydroprotolichesterinate (180 mg.), 0.024 g. Na, and 5.5 cc. MeOH refluxed 1 hr., poured into H2O, acidified with NaHSO4, extracted with Et2O, the extract worked up, the residue (0.129 g.) dissolved in 7 cc. MeOH, the solution treated with 1 cc. H2O containing 0.0304 g. NaOH, kept 5 days at room temperature, diluted with H2O, acidified with NaHSO4, and the precipitate recrystd. from glacial AcOH, washed with petr. ether, and recrystd. again from MeOH yielded 0.056 g. neodihydroprotolichesterinic acid (I), platelets, m. 97-8° (all m.ps. are corrected) I with CH2N2 gave the Me ester, m. 38-9° (uncor.). Me dl-isodihydroprotolichesterinate (0.31 g.) and 10.5 cc. absolute MeOH refluxed 5.5 hrs. with 0.00419 g. Na, treated with 1 cc. H2O, refluxed 6.5 hrs., cooled, diluted with H2O, acidified with NaHSO4, extracted with Et2O, the extract worked up, and the residue extracted with cold petr. ether left 0.070 g. I. C13H27COCH2CO2Me (II) (5 g.) and 2.9 g. powdered NaI added to 0.41 g. Na in 10 cc. absolute MeOH, the mixture treated with cooling during 10 min. with 3.0 g. BrCH2CO2Et, kept 2 days at room temperature, filtered, the residue washed with H2O, the filtrate poured into H2O, acidified and extracted with Et2O, and the extract worked up yielded 2.53 g. dialkylation product, C25H44O7, m. 42-3°. II (10 g.), 100 cc. dry C6H6, and 10 g. pyrrolidine, b. 86.5-87° refluxed 9 hrs. with the azeotropic removal of about 0.8 cc. H2O and evaporated gave 11.5 g. pyrrolidine enamine (III) of II, yellow liquid. III (11.5 g.), 100 cc. absolute MeOH, and 5.85 g. BrCH2CO2Et refluxed 29 hrs., and stirred overnight with 20 cc. H2O, the aqueous layer extracted with Et2O, and the combined organic layer and extract evaporated gave 10 g. brown oily C13H27COCH(CO2Me)CH2CO2Et (IV); a 10-g. portion in 50 cc. absolute MeOH treated with 8 cc. 1.0M NaBH4 in MeOH, allowed to stand 3 days, treated again with 11 cc. NaBH4 solution, allowed to stand 3 hrs., poured into H2O, acidified with NaHSO4, and extracted with Et2O, the extract washed, dried, and evaporated, the residual yellow oil dissolved with 7 g. KOH in 110 cc. 90% MeOH, allowed to stand 1 day at room temperature, cooled, filtered, the residue acidified with 5% HCl, digested 1 hr. at 70°, kept several hrs. at room temperature, filtered, dried (5.1 g.), and recrystd. from C6H6 yielded 4.8 g. 3-carboxy-4-oxoheptadecanoate (V), m. 80-3°. V (1 g.) treated with CH2N2 in Et2O and evaporated yielded 1.03 g. β-carbomethoxy-γ-tridecyl-γ-butyrolactone (VI), m. 68-70° (MeOH). (EtO)2CO (80 g.) and 8.6 g. butyrolactone refluxed at 125 mm., treated during 1 hr. with 2.39 g. Na in 56 cc. absolute EtOH while removing the EtOH simultaneously with the addition, the residual pale yellow, gelatinous mass poured into 60 cc. glacial AcOH and ice and extracted with 50 cc. Et2O, and the extract worked up yielded 4.1 g. α-carbethoxy-γ-butyrolactone(VII), b0.5, 106-9°. VII in EtOH treated with excess liquid NH3 gave HO(CH2)2CH(CONH2)2, m. 152.5-53° (EtOH). VI (3 g.) and 7.55 g. (EtO)2CO treated dropwise during 1 hr. with stirring under reflux at 125 mm. with 0.212 g. Na in 5.6 cc. absolute EtOH while removing the EtOH continuously, the resulting slush poured into 6 cc. glacial AcOH and ice and extracted with Et2O, and the extract worked up yielded 3.4 g. light red oil; a 0.79-g. portion chromatographed

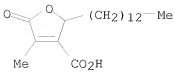
on 12 g. silicic acid did not give the desired carbethoxylation product; a 2.37-g. portion in 20 cc. MeOH containing 1.27 g. KOH kept 5 days at room temperature, acidified with 5% HCl, filtered, and the residue washed with H2O, dried, and extracted with ligroine (b. 60-8°) left 1.4 g. material C18H32O4, m. 133-5°. C13H27CH:CHCO2H (VIII), m. 47-9° (aqueous EtOH), was prepared by the method of Myers (C.A. 46, 1438g) and separated in 45% yield from the by-product C14H29CH(OH)CO2H by extracting the crude mixture with petr. ether at room temperature, filtering, cooling to 0°, filtering again, evaporating, and recrystg. the residue from aqueous MeOH. VIII (5 g.) in 50 cc. Et2O treated with CH2N2 in Et2O until the yellow color persisted for 5 min. and evaporated on the steam bath gave 5.3 g. Me ester (IX) of VIII. trans-VIII (1.0 g.) in a few cc. CCl4 treated with about 8 cc. 5% CCl4-Br in small portions during 0.5 hr. and evaporated, the residual yellow oily paste dissolved in 10 cc. Ac2O, the solution treated with 0.5 g. powdered KOAc, refluxed 3 hrs., treated with iced H2O, and filtered, the residual creamy paste refluxed 0.5 hr. with 15 cc. 8% alc. KOH, the mixture cooled, poured onto 50 g. ice containing a slight excess of dilute H2SO4, and extracted with Et2O, the extract evaporated, and the residual pale yellow waxy solid triturated during several days at room temperature with a few cc. petr. ether gave 0.04 g. compound A, m. 88.5-9.5°; the filtrate from the isolation of compound A cooled in ice gave 0.30 g. impure compound B, m. 56-61.5°; the crude compound B treated with three 10-cc. portions ligroine at room temperature, the combined exts. concentrated to 10 cc., cooled to 15°, and centrifuged, and the precipitate washed with a little cold ligroine and recrystd. from ligroine at 10° yielded 10 mg. pure cis-2,3-epoxyhexadecanoic acid, flakes, m. 70.0-70.9°. (CF3CO)2O (21.2 cc.), 3.5 cc. 90% H2O2, and 25 cc. CH2Cl2 added with cooling dropwise during 40 min. to 10.6 g. IX, 56.5 g. Na2HPO4, and 70 cc. dry CH2Cl2, refluxed 0.5 hr., and stirred with 100 cc. H2O, the aqueous layer washed with 70 cc. CH2Cl2, and the combined organic layer and extract washed, dried, and worked up yielded Me tridecylglycidate (X) in 3 fractions: (1) b0.4 140-6°, 3.73g.; (2) b0.4 148-50°, 2.62 g.; (3) b0.4 150-2°, 3.73 g. X (0.2902 g.), 10 cc. dioxane, and 0.5 cc. 10% aqueous NaOH refluxed 1.5 hrs. under N, cooled, poured into iced H2O containing 5 cc. 5% HCl, and extracted with Et2O, the extract worked up, and the residual oil diluted with 8 cc. petr. ether, cooled, and filtered yielded 0.122 g. trans-tridecylglycidic acid, platelets, m. 86-7°. Na (0.485 g.) in 8 cc. absolute MeOH treated with 2.79 g. CH2(CO2Me)2, the mixture treated during 10 min. with stirring with 6.00 g. X in 10 cc. absolute MeOH, refluxed 4 hrs., cooled, poured into 150 cc. ice and H2O, acidified with 5% HCl, extracted with CHCl3, and the extract worked up gave 7.85 g. crude, pale yellow, oily product which chromatographed on silicic acid gave pure α,β- dicarbomethoxy-γ-tridecyl-γ-butyrolactone (XI), white wax. XI (2.1 g.) in 40 cc. MeOH treated with 5 cc. H2O containing 1.84 g. KOH, refluxed 3 hrs., kept overnight at room temperature, decanted, the oily residue dissolved in 50 cc. H2O, the solution acidified with 5% HCl to Congo red and filtered, and the residue dried (1.182 g.) and recrystd. from 20 cc. hot MeOH yielded 0.721 g. mono-K salt (XII) of α,β-dicarboxy-γ-tridecylbutyrolactone (XIII), powder, m. 124° (decomposition); the mother liquor poured into 100 cc. H2O, acidified with 5% HCl, extracted with Et2O, and the extract worked up gave 0.494 g. white material. XII (0.0394 g.) refluxed 0.5 hr. with 0.5 cc. 5% H2SO4, cooled, extracted with Et2O, and the extract worked up gave 0.0265 g. mixed diastereoisomers of V, m. 87.5-94.5°. XII (0.050 g.) in 5

cc. MeOH acidified with 5% HCl, diluted with H2O, extracted with Et2O, and the extract dried and evaporated under N at room temperature gave 0.036 g. XIII. XII (0.372 g.) treated with 0.207 g. Et2NH and 0.126 g. 30% aqueous CH2O, diluted with 2 cc. MeOH, heated 1 min. on the steam bath, kept 1 day at room temperature, treated again with 0.126 g. 30% aqueous CH2O, allowed to stand 1 day, diluted with a few cc. MeOH, evaporated, the residue evaporated twice with CHCl3, the resulting solid kept overnight in 5 cc. CHCl3 and filtered, and the residue (0.114 g.) dissolved in glacial AcOH, treated with a few drops H2O, cooled to 15°, and filtered gave 0.061 g. dl-protolichesterinic acid (XIV), m. 92.5-4.5° the filtrate from the crude XIV K salt evaporated, the residual semisolid dissolved in 2 cc. dry C6H6, the solution kept 3 days at room temperature with 5 cc. MeI, filtered, evaporated at about 40° under N, the residual crude oil (0.338 g.) dissolved in 4 cc. MeOH, the solution treated with 5.5 cc. 5% aqueous NaHCO3, allowed to stand 3 days, diluted with H2O, extracted with Et2O, the aqueous solution acidified with 5% HCl and extracted with Et2O, and the extract worked up yielded 0.0513 g. (crude) XIV, m. 87.5-97.5°. Crude XIV (74 mg.) chromatographed on 5 g. silicic acid gave 29% purified dl-lichesterinic acid (XV), m. 114-15°, 42% XIV, m. 100.5-101.5°, and 11.8% less pure XIV, m. 98.5-100°. XIV (30 mg.) and 5 cc. Ac2O heated 1 hr. on the steam bath, cooled, diluted with H2O, and filtered yielded 21 mg. XV, m. 113-15° (AcOH). XIV (20 mg.) in 10 cc. glacial AcOH hydrogenated over 50 mg. 10% Pd-C, filtered, diluted with H2O, the precipitate recrystd. from AcOH, and the product extracted with boiling ligroine and recrystd. from AcOH yielded 9 mg. dihydro derivative of XV, m. 114-16°. XII (0.3835 g.), 3 cc. MeOH, 0.079 g. Me2NH.HCl, 0.0873 g. Me2NH, and 0.097 g. 30% aqueous CH2O kept 2 days at room temperature, filtered, treated with a few cc. MeOH, evaporated in vacuo on the steam bath, this procedure repeated twice with the addition and removal of CHCl3, the residual waxy solid treated with 3 cc. dry C6H6 and 5 cc. MeI, the mixture kept 3 days at room temperature, filtered, and the residue (0.653 g.) recrystd. from glacial AcOH yielded 0.340 g. methiodide (XVI), platelets, m. 165° (decomposition); the filtrate evaporated under N, the residual yellow oil (0.126 g.) dissolved in 2 cc. MeOH, the solution treated 3 days at room temperature with 2.1 cc. 5% aqueous NaHCO3 and extracted with Et2O, the aqueous phase acidified with 5% HCl and extracted with Et2O, the extract dried and evaporated, and the residue (0.038 g.) extracted with ligroine and recrystd. from aqueous AcOH gave 0.010 g. V, m. 98-100°. MeOH (5 cc.) and 2.8 cc. 5% aqueous NaHCO3 added to 0.211 g. XVI, kept 3 days at room temperature, diluted with H2O, washed with CHCl3, acidified, extracted with CHCl3, and the extract worked up yielded 0.029 g. XIII, m. 92-5° (AcOH).

IT 493-47-0P, Lichesterinic acid
RL: PREP (Preparation)
(preparation of)

RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)


O
O
(CH2)12—Me
Me
CO2H

L3 ANSWER 36 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1957:34629 CAPLUS
DOCUMENT NUMBER: 51:34629
ORIGINAL REFERENCE NO.: 51:6517c-i,6518a-d
TITLE: Preparation and properties of the isomeric forms of α-amino- and α,ε-diaminopimelic acid
AUTHOR(S): Wade, Roy; Birnbaum, Sanford M.; Winitz, Milton; Koegel, Robert J.; Greenstein, Jesse P.
CORPORATE SOURCE: Natl. Insts. of Health, Bethesda, MD
SOURCE: Journal of the American Chemical Society (1957), 79, 648-52
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
OTHER SOURCE(S): CASREACT 51:34629

AB CH2(CH2CH2CO2Et)2 cyclized by the method of Dobson, et al., (C.A. 4, 1028) yielded 76% α-carbethoxycyclohexanone (I), b0.4 70-2°. I coupled with PhN2Cl by the method of Jackson and Manske (C.A. 25, 514) gave 60% Et H α-oxopimelate phenylhydrazone, m. 141-2° (decomposition), which saponified with 1.1N NaOH in 50% aqueous dioxane gave HO2C(CH2)4C(:NNHPh)CO2H (II), prisms, m. 141-3° (decomposition) (from EtOAc-petr. ether). II (10 g.) refluxed 6 hrs. with 15 g. Zn dust and 150 cc. 75% AcOH, filtered, and evaporated, the residue dissolved in 50 cc. H2O, treated 3 hrs. with H2S; filtered hot, and evaporated to dryness, and the crystalline residue shaken with a little EtOH and filtered gave HO2C(CH2)4CH(NH2)CO2H (III), plates, m. 216° (decomposition) (from aqueous EtOH). III (3.5 g.) in 25 cc. 2N NaOH treated at 5° with 2.2 cc. Ac2O and 20 cc. 2N NaOH in alternate portions with shaking and cooling, the mixture kept 1 hr. at room temperature, acidified to about pH 1.7 with 4N HCl and evaporated at 40° in vacuo, the residue diluted with 20 cc. H2O, the evaporation repeated, the crsyt. residue extracted with hot Me2CO, and the extract filtered, concentrated, diluted with Et2O to incipient turbidity, scratched, and filtered yielded 2.5 g. N-Ac derivative (IV) of III, m. 111-12° (from Me2CO-Et2O). IV (2.5 g.) in 100 cc. H2O adjusted to pH 7.0-7.5 with 2N LiOH, treated with 1 g. renal acylase I, diluted to 130 cc., incubated about 4 hrs. at 39°, concentrated to 50 cc. in vacuo, dialyzed 4 times against 750 cc. H2O, the combined dialyzates (3 l.) concentrated to 15 cc. in vacuo, adjusted to pH 3.4 with 6N HCl, concentrated to beginning crystallization, diluted with 50 cc. absolute EtOH, and kept 24 hrs. at room temperature gave 800 mg. L-III, [α]D26 21.5° (c 1, 5N HCl); the filtrate acidified to pH 1.7, evaporated to dryness in vacuo, and extracted with boiling Me2CO, the extract concentrated in an air stream, the residual oil refluxed 2 hrs. with 125 cc. 2N HCl and evaporated to dryness in vacuo, the residue dissolved in a little H2O, the pH adjusted to 3.4 with 2N LiOH, and the solution concentrated to beginning crystallization and diluted with absolute EtOH yielded 500 mg. D-III, [α]D26 -21.0° (c 1, 5N HCl). D- and L-III gave the following Rf values (developer, and paper given): 0.44, PhOHNH4OH, Whatman Number 4; 0.43, 4:1:5 BuOH-AcOH-H2O, Whatman Number 4; 0.73, 10:77:20 pyridine-MeOH-H2O, Whatman Number 1. A mixture of the 3 isomers of CH2[CH2CH(NH2)CO2H]2 (V) was prepared in essentially the same manner in 66% yield; it showed 2 ninhydrin-sensitive spots with Rf values 0.46 and 0.57 corresponding to meso-V and D- and L-V. V (9.5 g.) in 125 cc. 2N NaOH treated with 19.5 cc. PhCH2OCOCl in portions with cooling and stirring during about 0.5 hr., the mixture shaken 2 hrs. at room temperature and washed with EtOAc, the aqueous layer acidified to pH 1.7 with 4N

HCl, the precipitated oil extracted into EtOAc, the extract dried, concentrated to 50°
in vacuo, kept at 4° overnight, and filtered, and the filter residue recrystd. from EtOAc gave 6.0 g. di(carbobenzyloxy) derivative (VI) of DL-V, m. 164-5° with shrinking at 155°. The combined EtOAc mother liquors from VI evaporated, and the gummy residue crystallized from hot CHCl3 gave 6.2 g. meso-isomer (VII) of VI, m 123-5°. VII (30 g.) in 300 cc. AcOH and 100 cc. H2O hydrogenated over Pd black, filtered, concentrated in vacuo, diluted with 50 cc., evaporated again, and recrystd. twice from 35% aqueous EtOH yielded 7.5 g. meso-V, Rf 0.45. VI (45.8 g.) and 27.8 cc. Et3N in 600 cc. dioxane treated slowly with cooling with 24.4 cc. iso-BuCOCl below 12°, kept 1 hr. at 10°, treated dropwise with 26 cc. NH4OH(d. 0.90), allowed to stand 16 hrs., and filtered by suction yielded 18.0 g. diamide (VIII) of VI, mass of needles, m. 223-4° (from aqueous HCONMe2). VIII (21.5 g.) hydrogenolyzed in 400 cc. AcOH over Pd black, filtered, evaporated, diluted with 25 cc. H2O, and again evaporated, the residual oil dissolved in 300 cc. H2O containing 1.15 g. Mn(OAc)2.4H2O, the pH adjusted to 6.5 with 2N LiOH, the mixture treated with 1.8 g. lyophilized amidase powder, the pH adjusted to 8.0 with 2N LiOH, diluted to 470 cc., kept 5 hrs. at 38°, concentrated to about 50 cc., dialyzed 4 times against H2O (about 900 cc. each time) at 5°, the combined dialyzates concentrated to about 50 cc. in vacuo, passed through Amberlite XE-64 (Li+ form), and collected in 20-cc. fractions, the combined fractions 19-31 evaporated to dryness, the residue dissolved in the min. amount of hot H2O, the solution treated with C, filtered, adjusted to pH 6.5 with 2N LiOH, and diluted with 4 vols. absolute EtOH, and the white amorphous precipitate reppted. twice in the same manner yielded 3.5 g. L-V, Rf 0.57, [α]D26 45.0° (c 1, N HCl). The fractions from number 176 on combined and evaporated in vacuo, the residual sirup refluxed 6 hrs. with 1 l. 3N HCl, evaporated, dissolved in 1.5N HCl, and passed through Dowex 50, and the effluent adjusted to 2.5N HCl and evaporated gave 2.9 g. D-V, [α]D26-45.5° (c 1, N HCl). The infrared absorption spectra of L-III, meso-V, and DL-V are recorded.

IT 493-47-0P, Lichesterinic acid
RL: PREP (Preparation)
(preparation of)

RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)

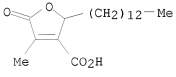
L3 ANSWER 37 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1957:34628 CAPLUS
DOCUMENT NUMBER: 51:34628
ORIGINAL REFERENCE NO.: 51:6517b-c
TITLE: Synthesis of (±)-protolichesterinic acid
AUTHOR(S): Van Tamelen, E. E.; Bach, S. R.
CORPORATE SOURCE: Univ. of Wisconsin, Madison
SOURCE: Chemistry & Industry (London, United Kingdom) (1956) 1308
CODEN: CHINAG; ISSN: 0009-3068
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB cf. C.A. 50, 6322a). A stereoselective synthesis of (±)-protolichesterinic acid (I) was carried out. Me 2-hexadecenoate with CF3CO3H yielded Me 2,3-epoxyhexadecanoate, b0.4 148-52°. Ring opening with di-Me malonate anion yielded, after spontaneous cyclization of the intermediate γ-hydroxy ester, α,β-dicarbomethoxy-γ-n-tridecyl-γ-butyrolactone. This on hydrolysis with hot MeOH-KOH was converted to the mono-K salt of the diacid, m. 124°, which with HCHO and Et2NH yielded I, m. 100.5-1.5°. Identification was confirmed by 3 separate tests.

IT 493-47-0P, Lichesterinic acid
RL: PREP (Preparation)
(preparation of)

RN 493-47-0 CAPLUS

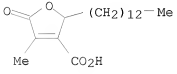
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 38 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1956:36797 CAPLUS
DOCUMENT NUMBER: 50:36797
ORIGINAL REFERENCE NO.: 50:7242c-d
TITLE: Chemical components of Parmelia species of India
AUTHOR(S): Rangaswami, S.; Rao, V. Subba
CORPORATE SOURCE: Andhra Univ., Waltair
SOURCE: Indian Journal of Pharmacy (1955), 17, 50-3
CODEN: IJPAAO; ISSN: 0019-5472
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Samples of P. nilgherrensis (I), P. perlata (II), and P. cirrhata (III) were examined All contained atranorin. Collatolic acid was found in I; II contained lecanoric acid; III contained d-protolichesterinic acid and salazinic acid.

IT 493-47-0, Fumaric acid, (1-hydroxytetradecyl)methyl-, γ-lactone
(in Parmelia)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



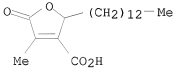
L3 ANSWER 39 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1956:31889 CAPLUS
DOCUMENT NUMBER: 50:31889
ORIGINAL REFERENCE NO.: 50:6322a-i
TITLE: Synthesis of dl-lichesterinic acid methyl ester
AUTHOR(S): Van Tameslen, Eugene E.; Osborne, Clyde E., Jr.; Bach, Shirley Rosenberg
CORPORATE SOURCE: Univ. of Wisconsin, Madison
SOURCE: Journal of the American Chemical Society (1955), 77, 4625-9
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB The Me ester (I) of dl-lichesterinic acid O.CO.CMe:C(CO2H).CH(CH2)12Me (II) has been synthesized by the SO2Cl2 dehydrogenation of Me ester (III) of dl-dihydroprotolichesterinic acid (IV), which was prepared by the NaBH4 reduction of C13H27COCH(CO2Me)CHMeCO2Me (V). Various transformations encountered in the catalytic reduction of II and protolichesterinic acid (VI) are presented, and the possible biogenetic origins of these substances are discussed. C13H27COCH2CO2Me (VII), m. 38-9°, was prepared in 40% yield by the method of Stallberg-Stenhagen (C.A. 41, 4105d), filtering the crude product by suction with a rubber dam and recrystg. at 0° from petr. ether. VII (5.0 g.), 2.9 g. NaI, and 3.18 g. MeCHBrCO2Et added to 0.41 g. Na in 10 cc. absolute MeOH, the mixture heated a few min. on the steam bath, held 4-7 days at room temperature, poured into H2O, acidified with NaHSO4, and filtered, and the waxy filter residue recrystd. from 30 cc. ligroine (b. 60-8°) gave 4.35 g. C13H27 COCH(CO2Me)CHMeCO2Me (VIII), colorless prisms, m. 49-50°. VIII (5 g.) in 50 cc. absolute MeOH held 3 days at room temperature with 3.9 cc. 1.0M NaBH4 in MeOH, the mixture treated with an addnl. 5.5 cc. NaBH4 solution, allowed to stand 3 hrs., and poured into H2O, the mixture acidified with NaHSO4, the precipitated oil extracted into Et2O, the extract dried and evaporated, the oily residue refluxed 19 hrs. with 3.5 g. KOH in 55 cc. 90% MeOH, the precipitate filtered, dissolved in H2O, and acidified with 5% HCl, the crude precipitate extracted with petr. ether, and the insol. residue recrystd. from glacial AcOH yielded 1.70 g. IV, m. 114-15°; the filtrate of the hydrolysis mixture poured into a large excess H2O and acidified with NaHSO4, the crystalline precipitate dried and extracted with boiling ligroine (b. 60-8°) to remove some II, m. 84.5-5.0°, and the residue recrystd. from glacial AcOH yielded 9% dl-isodihydroprotolichesterinic acid (IX), m. 135-6°. IV treated with CH2N2 gave III, m. 62.0-2.5° (from MeOH). Similarly was prepared the Me ester of IX, m. 67.0-7.15°. d-VI hydrogenated in glacial AcOH at room temperature over 10% PdC, the mixture diluted with H2O, and the precipitate recrystd. from glacial AcOH yielded 60% d-IV, m. 103.5-4.5°; Me ester, m. 54.5-5.5°. VI (1.8 g.) hydrogenated in the same manner gave dl-IV, m. 109-16°. C13H27CH:CHCO2H (8.8 g.) in 500 cc. H2O containing 18.5 g. KOH cooled to 0° with stirring, the resulting suspension warmed to room temperature, treated with stirring during 4 hrs. with 2.50 g. Cl gas, and acidified with an equivalent amount H2SO4, the white solid precipitate dissolved in Et2O, the solution dried and concentrated, the residual pale yellow oil dissolved in 90 cc. ligroine, the solution cooled several days at 0-5°, and the crystalline deposit (2.3 g.) recrystd. from ligroine gave 1.7 g. chlorohydroxydecanoic acid, m. 75.7-6.2°; Et ester, m. 50.8-1.5°. III (200 mg.), 160 mg. SO2Cl2, and 10 mg. Bz2O2 in 0.5 cc. CCl4 refluxed 18 hrs., the solvent removed in vacuo, the residue

treated with H2O and 20 cc. Et2O, the Et2O layer dried and evaporated, the residue dissolved in 1 cc. EtOH, the solution filtered, and chilled, and the solid deposit dried and recrystd. from MeOH yielded 7-17% I, m. 49-50°. II (5 mg.) from equal parts of the optical antipodes treated with CH2N2 in Et2O yielded I, m. 51-2°. IV heated with Br in polyphosphoric acid at 120-40° and the resulting product treated with collidine gave an unseparable mixture of products. IV treated with N-bromosuccinimide and Bz2O2 gave crude material containing about 7% II. dl-I (9.6 mg.) in 2 cc. MeOH treated with 1 cc. 2.66 + 10-2M aqueous NaOH, the solution held 5 days at room temperature, acidified with NaHSO4, and filtered, the filter residue dissolved in ligroine, the solution filtered and evaporated, and the residue recrystd. gave dl-II, m. 83-4°. d-II (540 mg.) in 200 cc. glacial AcOH hydrogenated over 200 mg. PtO2, the mixture filtered, the filtrate diluted with H2O, and the precipitate extracted with boiling ligroine and recrystd. 3 times from glacial AcOH yielded 250 mg. C13H27CH(CO2H)CHMeCO2H (X), m. 135.5-6.5°. X (82 mg.) heated 1 hr. at 100° in a sealed tube with 0.4 cc. AcCl, the excess AcCl evaporated, and the residue recrystd. from ligroine, at -78° gave 57% anhydride of X, m. 34°.

IT 493-47-0P, Fumaric acid, (1-hydroxytetradecyl)methyl-, dl-, γ-lactone
RL: PREP (Preparation)
(preparation of)

RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 40 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1954:78414 CAPLUS
DOCUMENT NUMBER: 48:78414
ORIGINAL REFERENCE NO.: 48:13836b-d
TITLE: Chemical investigation of the lichens: Parmelia kamtschadalis and Parmelia arnoldii
AUTHOR(S): Shah, Latika G.
CORPORATE SOURCE: Inst. Sci., Bombay
SOURCE: Journal of the Indian Chemical Society (1954), 31, 253-6
CODEN: JICSAH; ISSN: 0019-4522
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Solvent extraction of 2 varieties of lichen led to the recovery and identification of several crystalline substances. Air-dried Parmelia kamtschadalis (400 g.) was extracted with cold petr. ether, the extract was concentrated, and the material which separated was recrystd. from CHCl3-EtOH to give 0.05 g. of atranorin (I), m. 195-7°. The material left after the petr. ether extraction was repeatedly extracted with Et2O. The concentrated extract gave 2 g. I. The Et2O filtrate was extracted with NaHCO3 solution Acidification and extraction of the aqueous solution with Et2O and evaporation of the dried solution gave 1.0 g. of protolichesteric acid (II), on crystallization from alc. m. 104-5°, [α]D = +9° (7-9%, alc.). Lichesteric acid (III), m. 120-2°, crystallized from the diluted filtrate from the crystallization of II. The residue from the Et2O extraction of the lichen was extracted with alc. The extract was concentrated and yielded crystalline salazinic acid (IV). The alc. filtrate was evaporated to dryness to give a sirupy mass containing a reducing sugar. Attempts to prepare an osazone were unsuccessful. Refluxing in Ac2O with pyridine gave a tetraacetate, m. 68°. Further extraction of the lichen with EtOAc gave an addnl. 1.0 g. of IV, while extraction with Me2CO gave 5.2 g. addnl. IV. Air-dried P. arnoldii (300 g.) extracted as described for P. kamtschadalis gave I and lecanoric acid, 178-81°, from the Et2O extract The EtOAc extract gave IV.

IT 493-47-0, Fumaric acid, (1-hydroxytetradecyl)methyl-, γ-lactone
(in Parmelia kampschadalis)

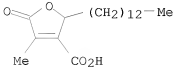
RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)

L3 ANSWER 41 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1954:15247 CAPLUS
DOCUMENT NUMBER: 48:15247
ORIGINAL REFERENCE NO.: 48:2822g-h
TITLE: The antibiotic action of lichen substances
AUTHOR(S): Klosa, Josef
CORPORATE SOURCE: Altheiderstr. 11, Berlin
SOURCE: Hoppe-Seyler's Zeitschrift fuer Physiologische Chemie (1951), 287, 197-204
CODEN: HSZPAZ; ISSN: 0018-4888
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB All of the 82 lichen substances tested had strong antibiotic action against Micrococcus pyogenes var. aureus, Streptococcus pyogenes, pneumococci, and diphtheria bacteria. The strongest antibiotic action was found in the Parmeliaceae, Cladoniaceae, and Usneaceae. Purified lichen acids also showed antibiotic properties. The in vitro antituberculous action of the lichen substances was reduced by the addition of serum.

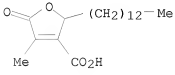
IT 493-47-0, Fumaric acid, (1-hydroxytetradecyl)methyl-, γ-lactone
(antibiotic action of)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 42 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1952:68533 CAPLUS
DOCUMENT NUMBER: 46:68533
ORIGINAL REFERENCE NO.: 46:11463i,11464a
TITLE: d-Lichosteric acid-effect in vivo on pigmented mice with inoculation tuberculosis
AUTHOR(S): Vartia, K. O.; Tervila, Leo
CORPORATE SOURCE: Univ. Helsinki, Finland
SOURCE: Annales Medicinae Experimentalis et Biologiae Fenniae, Supplementum (1952), 30, 76-8
CODEN: AMBSA9; ISSN: 0066-2178
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Administration of d-lichesteric acid to mice infected with tuberculosis did not affect the course of the disease, while distinct retardation was observed if the latter was administered with streptomycin.

IT 493-47-0, Lichesteric acid
(effect on pigmented mice with inoculation tuberculosis)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



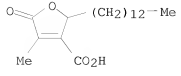
L3 ANSWER 43 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1952:52941 CAPLUS
DOCUMENT NUMBER: 46:52941
ORIGINAL REFERENCE NO.: 46:8811e-i,8812a
TITLE: Antibiotic effects of lichen and lichen substances
AUTHOR(S): Vartia, K. O.
CORPORATE SOURCE: Helsinki Univ., Finland
SOURCE: Annales Medicinae Experimentalis et Biologiae Fenniae, Supplementum (1950), 28(Suppl. 7), 5-82
CODEN: AMBSA9; ISSN: 0066-2178
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB In preliminary tests made with pieces of lichen, 75 out of 149 forms (50%) were found distinctly active towards a min. of 2 bacteria studied. Of these, the active substance of 50, or 2/3, was known. Gram-pos. bacteria only, as a rule, were susceptible; the distinct inhibitory effect on gram-neg. rods observed in some cases was obviously due to the decomposition products of lichen substances. Of the total of 20 crystalline lichen substances or related compds. 15, of different inhibitory profiles, proved to be more or less active against the rapidly growing gram-pos. bacteria and the tubercle bacillus(TB). The substances tested represented 8 types of lichen substances: the aliphatic lactones (d-protolichesteric and d-lichesteric acids) inhibited fairly strongly the growth of rapidly growing bacteria, in particular those of the aliphatic fatty acid type (lichesterylic and caperatic acids) revealing a comparatively better inhibitory effect on the growth of the TB, as did the pulvic acid derivs. (pinastric acid and the anilide of pulvic acid). The cumarone derivative (usnic acid) was of the same effective range as the most active lichen substances of other types. The activity of the depsides of orcinol type (evernic, divaricatic, gyrophoric, and umbilicaric acids) and that of the depsidones of orcinol type (physodic acid) seemed to increase with the growth in length of the side chains, except as regards the tubercule bacillus. The chlorine-containing diploicin was comparatively best in effecting gram-pos. dust bacteria. Two usnic acid derivs. only (usnolic and decarbousnic acids) and the depsidones of β-orcinol type (fumarprotocetraric and salazinic acids and the hexaacetate of salazinic acid) were found completely inactive. The depside of β-orcinol type (atranorin) also was very weakly active only against the rapidly growing bacteria, inhibiting the growth of the tubercle bacillus comparatively better. The decomposition product of atranorin (atranol) had a distinct inhibitory effect on the growth of gram-neg. bacteria. With some individual lichen substances of different types distinct activity on various fungal strains was observed. The nature of the different types of lichen substances seems to depend, apart from the basic structural formula of the substance, to a surprisingly great degree on seemingly insignificant changes in their mols.

IT 493-47-0P, Lichesteric acid
RL: PREP (Preparation)
(preparation of)

RN 493-47-0 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



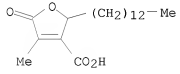
L3 ANSWER 44 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1951:39033 CAPLUS
DOCUMENT NUMBER: 45:39033
ORIGINAL REFERENCE NO.: 45:6691h-i,6692a-b
TITLE: Antibacterial effects of lichen substances. I. Comparative studies of antibacterial effects of various types of lichen substances
AUTHOR(S): Shibata, Shoji; Miura, Yoshiaki; Sugimura, Hisako; Toyoizumi, Yuri
CORPORATE SOURCE: Univ. Tokyo
SOURCE: Yakugaku Zasshi (1948), 68, 300-3
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB cf. preceding abstract The relation between the chemical structure of usnic acid and its antibacterial effects described in previous papers was discussed. Comparatively powerful antibacterial activities against gram-pos. bacteria were found in lichesterinic acid and its derivs. and in depsides from orcinols having large alkyl radicals. No antibacterial activities were found in fatty acids of the caperatic acid type, depsides of the β-orcinol series, depsidones, and endocrocin related to anthraquinone. None showed any activity against gram-neg. bacteria. The highest dilns. inhibiting growth of M. tuberculosis (avian type) and Staph. aureus, resp., were: protolichesterinic acid -, 1:80,000; l-lichesterinic acid 1:40,000, 1:160,000; l-dihydroprotolichesterinic acid 1:80,000, 1:80,000; caperatic acid -, 1:5,000; rangiformic acid -, < 1:5,000; zeorin -, < 1:5,000; lecanoric acid -, < 1:5,000; divaricatic acid 1:10,000, 1:80,000; sphaerophorin -, 1:80,000; anziaic acid -, 1:80,000; perlatolinic acid 1:40,000, 1:80,000; olivetoric acid 1:10,000, 1:20,000; sekikaic acid 1:10,000, 1:80,000; ramalinolic acid -, 1:20,000; boninic acid -, 1:10,000; atranorin -, < 1:5,000; thamnolic acid -, < 1:5,000; lobaric acid -, 1:20,000; salazinic acid -, 1:5,000; psoromic acid -, 1:5,000; fumarprotocetraric acid -, < 1:5,000; pannarin -, < 1:5,000; endocrocin -, <1:5,000.

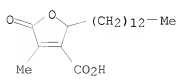
IT 493-47-0, Lichesteric acid
(and derivs., antibacterial effects of)

RN 493-47-0 CAPLUS

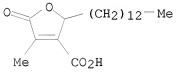
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 45 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1949:6300 CAPLUS
DOCUMENT NUMBER: 43:6300
ORIGINAL REFERENCE NO.: 43:1322b-f
TITLE: Lactone aliphatic acids as antibacterial agents
AUTHOR(S): Cavallito, Chester J.; Fruehauf, Dorothy M.; Bailey, John H.
SOURCE: Journal of the American Chemical Society (1948), 70, 3724-6
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB A study has been made of the relationship between lactone structure and antibiotic activity. The Na salt of α-carbethoxybutyrolactone (18 g.) in 250 cc. absolute EtOH and 0.1 mol. of the alkyl bromide were refluxed 4 hrs., the reaction mixture poured into 500 cc. H2O, extracted with three 150-cc. portions of CHCl3, and the residue saponified with 8.4 g. KOH in 150 cc. EtOH; the yields of the substituted α-carboxybutyrolactones, H2C.CH2.CR(CO2H).CO.O, were from 20 to 45% (R is given): C10H21 m. 75-7° (m.ps. corrected), η (in 0.1 M K phosphate buffer at pH 7; acid concentration 3 + 10-5 millimol./cc.) 70.3; C12H25 m. 78-9°, ε 68.1; C13H27 m. 69-70°, η 43.3; C14H29 m. 82-3°, η 35.0 (γ-Me derivative m. 64-7°, η 33.2); C16H33 m. 80-2°, η 41.4 (γ-Me derivative m. 60-3°, η 37.6). l-Protolichesterinic acid (I) (1.5 g.) and 1.5 g. l-cysteine-HCl in dilute NaHCO3 (pH 7), kept 20 hrs. at 25° and the solution strongly acidified with HCl, give 1 g. of the l-cysteine derivative (II) of I, m. 185-8° (decomposition); the addition appears to be through the SH group. Data are given for the min. bacteriostatic concentration for Streptococcus hemolyticus C203, Staphylococcus aureus 209, Clostridium welchii, Bacillus typhi, and B. tuberculosis ranae and H37Rv for the above lactones, I, II, l-lichesterinic acid, l-dihydroprotolichesterinic acid, and chaulmoogric acid. The antibacterial activity of I is related to its effect on η and not to any significant extent on the unsatd. system. II is much less inhibitory to bacteria than is I. Of the lactones, the C14 chain was optimum in contributing to the antibacterial activity and the γ-Me derivative has about the same activity. The lactone aliphatic acids are more compatible with complex media than are the aliphatic monocarboxylic and malonic acids and are more soluble at neutrality.
IT 493-47-0, Fumaric acid, (1-hydroxytetradecyl)methyl-, l-, γ-lactone
(bacteriostatic action of)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 46 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1939:54740 CAPLUS
DOCUMENT NUMBER: 33:54740
ORIGINAL REFERENCE NO.: 33:7885h-i,7886a
TITLE: The effects of agaricic, abietic and lichesteric acids
AUTHOR(S): Fischer, R.; Toth, D.
SOURCE: Archiv fuer Experimentelle Pathologie und Pharmakologie (1938), 190, 500-9
CODEN: AEXPBL; ISSN: 0365-2041
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The hemolytic indexes for agaricic (I), lichesteric (II) and abietic (III) acids were, resp.: 30,000, 40,000 and 18,000. On addition of cholesterol the hemolytic indexes for I, II and III were 1800, 5000 and 16,000. The foam values for I, II and III were 1:30,000, 1:25,000 and 1:1000. The absorption-increasing doses in γ per g. of frog for I, II and III were, resp.: 5 γ after 55 min., 3 γ after 45 min. and 120 γ after 150 min. The fish indexes were 1:25,000, 1:25,000 and 1:5000.
IT 493-47-0P, Lichesteric acid
RL: PREP (Preparation)
(preparation of)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



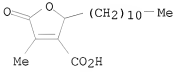
L3 ANSWER 47 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1937:21713 CAPLUS
DOCUMENT NUMBER: 31:21713
ORIGINAL REFERENCE NO.: 31:3028h-i,3029a-i
TITLE: Lichen substances. LXXVII. The lichen aliphatic acids from Nephromopsis endocrocea
AUTHOR(S): Asahina, Yasuhiko; Yanagita, Masaiti; Sakurai, Y.
SOURCE: Berichte der Deutschen Chemischen Gesellschaft [Abteilung] B: Abhandlungen (1937), 70B, 227-35
CODEN: BDCBAD; ISSN: 0365-9488
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB It had been shown (C. A. 29, 7308.5) that Nephromopsis endocrocea Y. Asahina yields, in addition to the yellow pigment endocrocin, a colorless aliphatic acid (I) and a neutral substance (II). I, which was apparently a homogeneous lactonic acid, m. 93-5°, [α]D20 25.46°, proved to be really a mix. of 2 acids, for with KMnO4 it gave lauric acid and a saturated monobasic lactonic acid C17H30O4, designated nephrosteranic acid (III), and on ozonolysis yielded a considerable amount of HCHO, indicating the presence of a vinyl group (Clemo and MacDonald, C. A. 29, 7939.2). If I is heated with Ac2O, it gives an acid (IV), m. 112°, [α]D24 33.75° (CHCl3), stable toward cold KMnO4 but partly oxidized to lauric acid when heated, leaving III. With boiling alkali IV partially changes into a ketonic acid, nephrosterylic acid, C16H30O3 (V), whose oily oxime gives on Beckmann rearrangement an amide which can be cleaved to undecylamine, m. 20° (Bz derivative, m. 57°), and pyrotartaric acid, m. 112°. On dry distillation IV gives, along with III, an unsatd. lactone, C16H28O2 (VI), which is hydrolyzed by alkali to V; it must therefore be the enol lactone of V and is called nephrosterylolactone. These facts show that III is an original component of I which remains unchanged in all the above reactions. The other (unsatd.) component, which is designated nephrosterinic acid (VII), is reminiscent of protolichesterinic acid (C. A. 26, 5067). To sep. III and VII, I was treated with semicarbazide, which gave, together with III, a semicarbazino compound, C18H33O5N3 (VIII); the free VII could not be regenerated from VIII, but on the assumption that the semicarbazide adds at the vinyl double bond, VII would have the composition C17H28O4. VII was also obtained as a Hg(OH) Cl compound (IX) by treating I with Hg(OAc)2 and then with NaCl; demercurization of IX yielded no well defined product, however. A sharp separation of III and VII was effected by chromatography on Al3O3, the unsatd. VII being retained in the upper part of the Al2O3 while III accumulated in the lower part. On catalytic hydrogenation, the mixture I was completely converted into III; III is therefore a dihydro derivative of VII. VII is accordingly assigned the structure shown in the accompanying formula. By rearrangement it changes into isonephrosterinic acid (X) which on distillation loses CO2 and gives VI. On saponification with alkali, both X and VI yield V, C11H23COCH2CHMeCO2H, whose structure was established by synthesis as well as by the Hofmann rearrangement of its oxime (see above). II is very similar to, perhaps identical with caperin (J. prakt. Chemical 58, 409(1898)); it gives sterol-like color reactions, a property which has not been reported for caperin. III (0.3 g. from 1 g. I in 10% KOH treated with saturated KMnO4 to a permanent violet color), m. 95°, is recovered unchanged when boiled 3 hrs. in 10% KOH and acidified. V, m. 74°, soluble without color in Na2CO3; semicarbazone, m. 117°. VI (2.5 g. from 5 g. IV heated at 200-10° under 15 mm. until the evolution of CO2 ceases and then distilled at 210-30°), b3 185-9°, decolorizes KMnO4. VIII (0.4 g. from 1 g. I), sinters around 150°, decomposes 183-4°, is quite stable to KMnO4 in acetone. IX, m. 95°, very stable to HCl, gives in alc. AcOH HgS with H2S but the filtrate yields only amorphous products. VII, m.

96°, [α]D10 10.81° (CHCl3), instantly decolorizes KMnO4 in acetone. X (0.05 g. from 0.12 g. VII heated 1 hr. in Ac2O at 105°), m. 113°, [α]D11 32.98° (CHCl3), stable to KMnO4 in acetone. Et laurinoylacetate (XI), from Et laurinoylacetoacetate and NH4OH, b10 173-5° gives with PhNHNH2 phenylundecylpyrazolone, sandy powder becoming discolored at 205° and carbonizing around 240°. Heated 4 hrs. in alc. at 120° with Na and MeCHBrCO2Me, XI yields a light yellow oil, b4 180-90°, consisting chiefly of Me Et methyllaurinoylsuccinate, which, heated 8 hrs. with HI (d. 1.7) on the water bath, gives α-methyl-β-laurinoylpropionic acid (= V). II, (C12H2O3)n, m. 248°, [α]D18.5 -100.2° (CHCl3), insol. in KOH, gives no color in alc. with either FeCl3 or bleaching powder, dissolves in hot concentrated H2SO4 with red-brown color changing to dirty green; the CHCl3 solution with a few drops Ac2O and 1 drop concentrated H2SO4 becomes blue-violet, then green.

IT 75232-40-5P, Isonephrosterinic acid
RL: PREP (Preparation)
(preparation of)

RN 75232-40-5 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-undecyl- (9CI) (CA INDEX NAME)



L3 ANSWER 48 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1936:22403 CAPLUS
DOCUMENT NUMBER: 30:22403
ORIGINAL REFERENCE NO.: 30:2945i,2946a-g
TITLE: Lichen substances. LXII. Constituents of Cetraria islandica Ach.
AUTHOR(S): Asahina, Yasuhiko; Yanagita, Masaiti
SOURCE: Berichte der Deutschen Chemischen Gesellschaft [Abteilung] B: Abhandlungen (1936), 69B, 120-5
CODEN: BDCBAD; ISSN: 0365-9488
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

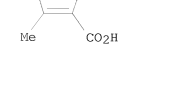
AB cf. C. A. 30, 1041.1. Asano (C. A. 26, 5067) established the structures of protolichesterinic (I) and lichesterinic acid (II), but as he worked not with Cetraria islandica Ach. (III) but with a lichen now considered to be an independent species, C. tenuifolia (Retz.) Howe (IV), the authors undertook a study of the true III, gathered on Mt. Asibetu and morphologically identical in all respects with the European lichen. It contained about 4% of a fatty acid mixture, m. around 90°, [α]D20 -45.62° (CHCl3), from which d-I was readily isolated. The mother liquor then yielded a strongly l-rotatory isomer, l-alloprotolichesterinic acid (V), which gave l-II with hot Ac2O and a pyrazoline derivative with CH2N2, and hence must be structurally identical with I. Heating the fatty acid mixture with Ac2O gave, as expected, dl-II. IV yielded l-I. The fumaroprotocetraric acid, however, which is always found in the European III and in IV, could not be detected in the Japanese III. Theoretically, I has 4 possible different configurations (2 pairs of optical antipodes). There is no reason for assuming a change in the configuration at C atom 4 when I changes into II; l-I would then differ from l-V only in the configuration at C atom 3. Hydrogenation of the I gives, theoretically, 2 dihydro derivs. each, the 8 isomers forming 4 pairs of optical antipodes. Whether the dihydro derivs. obtained from l-I, d-I and l-V are homogeneous or mixts. of 2 diastereomers has not yet been established. d-I, m. 106°, [α]D20 12.07° (CHCl3). V, m. 88°, [α]D23 -56.34° (absolute alc.), [α]D20 -49.53° (CHCl3), instantly decolorizes KMnO4 in acetone. Compound, C21H36O4N2, from V and CH2N2, m. 68-9°, [α]D18 -73.69°, stable toward KMnO4 in acetone. l-II, m. 123°, [α]D20 -25.06° (CHCl3). Dihydro derivative of l-V, m. 92-3°, stable toward KMnO4, [α]D20 -7.41° (CHCl3). l-I, m. 106°, [α]D18 -12.12° (CHCl3); dihydro derivative, m. 106°, [α]D18 -30.96° (CHCl3); pyrazoline derivative, m. 54-5°, [α]D18 -183.1° (CHCl3). Dihydro derivative of d-I, m. 106°, [α]D15 34.60° (CHCl3); pyrazoline derivative, m. 54-5°, [α]D18 190.60°.

IT 22800-25-5P, Lichesterinic acid, l-
RL: PREP (Preparation)
(preparation of)

RN 22800-25-5 CAPLUS

CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2S)- (CA INDEX NAME)

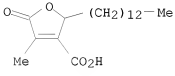
Absolute stereochemistry.



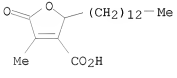
L3 ANSWER 49 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1935:39201 CAPLUS
DOCUMENT NUMBER: 29:39201
ORIGINAL REFERENCE NO.: 29:5072d-f
TITLE: Constituents of Iceland moss. V. Reduction of di-hydroprotolichesterinic acid and lichesterinic acid
AUTHOR(S): Asano, Michizo; Azumi, Tiaki
SOURCE: Berichte der Deutschen Chemischen Gesellschaft [Abteilung] B: Abhandlungen (1935), 68B, 991-4
CODEN: BDCBAD; ISSN: 0365-9488
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Cf. C. A. 26, 5067. λ-Isostearic acid (I), from lichesterinic acid with HI and red P (Boehm, Arch. Pharm. 241, 1 (1903)), m. 48-9°; amide, m. 104-4.5°; anilide, m. 86-6.5°; p-toluide, m. 82-3°. Lichesterylic acid with N2H4.H2O gives 4-methyl-6-tridecylpyridazinone, m. 66°, which with NaOEt at 170-80° smoothly yields I. I was also synthesized by condensing MeCH(CO2Et)2 with NaOEt and pentadecyl iodide to di-Et methylpentadecylmalonate, yellowish oil, b2 197-207°, saponifying the ester to the free acid, m. 95.5-6.5°, decomposing about 175°, and decarboxylating the latter at 170-80°. There can be no doubt, therefore, that I is α-methylheptadecanoic acid. Dihydro-d-protolichesterinic acid, m. 104-6° (Me ester, m. 51.5-2.5°), heated with HI and red P in a sealed tube and then reduced with Zn and AcOH, gives α-methyl-α'-tetradecylsuccinic acid, m. 133-5°.

IT 493-47-0, Lichesterinic acid
(reduction of)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



L3 ANSWER 50 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1932:49136 CAPLUS
DOCUMENT NUMBER: 26:49136
ORIGINAL REFERENCE NO.: 26:5067f-h
TITLE: Constitution of protolichesterinic acid and lichesterinic acid
AUTHOR(S): Asano, M.; Kanematsu, T.
SOURCE: Berichte der Deutschen Chemischen Gesellschaft [Abteilung] B: Abhandlungen (1932), 65B, 1175-8
CODEN: BDCBAD; ISSN: 0365-9488
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB cf. C. A. 25, 4266-7. The reactions of protolichesterinic and lichesterinic acid are best explained by the formulas I and II, (R = Me(CH2)12), resp., for the 2 acids. The following exptl. data are given in the present paper: II, m. 123.5°, was obtained in 59-g. yield from 3800 g. Iceland moss from Tateyama, Province of Etchu. With excess of 0.1 N KOH on the water bath it gives lichesterylic acid, m. 83-4° (semicarbazone, m. 125°). From 3 g. I-I, m. 107.5°, with CH2N2 is obtained a neutral compound (III) m. 60-1°, which does not decolorize KMnO4, while I-II forms only the Me ester, C20H3404, m. 53-4°, [α]D14 -28.07° (CHC13). II is strikingly stable toward KMnO4, but after long-continued action in the cold it is finally converted into myristic acid.
IT 493-47-0P, Lichesterinic acid
RL: PREP (Preparation)
(preparation of)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)

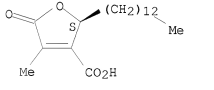


L3 ANSWER 51 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1931:37818 CAPLUS
DOCUMENT NUMBER: 25:37818
ORIGINAL REFERENCE NO.: 25:4266i,4267a-c
TITLE: Constituents of Icelandic moss. III. Synthesis of lichesteric acid
AUTHOR(S): Asano, M.; Ohta, Z.
SOURCE: Yakugaku Zasshi (1931), 51, 395-401(in German 36-7)
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

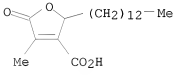
AB The present work was undertaken to study the structure of protolichesteric acid (I). It had been shown that I on boiling with anhydrous AcOH gave lichesteric acid which on hydrolysis with alkali gave lichesterylic acid, C19H34O3, a keto acid. The oxime of this latter acid on Beckmann rearrangement gave an acid amide (II) which on hydrolysis gave N-tridecylamine and methylsuccinic acid. An attempt was made to determine the position of the Me group in II by synthesis. Myristyl chloride (prepared by treating myristic acid (20 g.) with SO2Cl2 (32 g.) when treated with NH3 in the cold gave the amide (III), m. 105-6° (yield 16 g.). III (16 g.) in MeOH (100 g.) when treated with NaOEt gave tridecylurethan (IV), C13H27NHCO2Me, m. 56° (yield 6 g.), which was hydrolyzed to tridecylamine (V). V (10 g.) in Et2O when treated with CH2ClCOCl (16.6 g.) for 1 hr. on the water bath gave chloroacetyltridecylamine (VI), C16H30ONCl, m. 66.5-7° (yield 8 g.). VI (6 g.) when treated with CH2(CO2Me)2 at 120° for 8 hrs. gave a compound (yield 10 g.) m. 69-70°, whose composition corresponded to C13H27NHCOCH2OC2H5. Myristyl chloride (30.5 g.) with AcCH2CO2Et (31 g.) and Na (5.4 g.) gave Et myristylacetoacetate (VII), b3 170-83° (yield 24.7 g.). This gave the characteristic β-ketone reactions. VII (8.5 g.) in absolute alc. (20 cc.) and Na (0.66 g.) with MeCHBrCO2Et (4.2 g.) in a sealed tube at 120° for 4 hrs. gave a compound (VIII) (yield 8.5 g.). Saponification of VIII with alc. KOH gave a compound m. 83-4° which did not depress the m. p. of the natural lichesterylic acid. The semicarbazone m. 126°.

IT 22800-25-5P, Lichesterinic acid, l-
RL: PREP (Preparation)
(preparation of)
RN 22800-25-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2S)- (CA INDEX NAME)

Absolute stereochemistry.

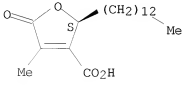


L3 ANSWER 52 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1931:37817 CAPLUS
DOCUMENT NUMBER: 25:37817
ORIGINAL REFERENCE NO.: 25:4266g-i
TITLE: Constituents of Icelandic moss. II
AUTHOR(S): Asano, M.; Kanematsu, T.
SOURCE: Yakugaku Zasshi (1931), 51, 390-5 (in German 35)
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB cf. C. A. 22, 4470. In a previous investigation A. isolated from Icelandic moss of Nikko province l-protolichesteric acid, C19H22O4, m. 107.5-8°, for which he suggested the structure HO2CCH-c:cH2 Me(CH2)12CH.O.CO or HO2CC:CMe Me(CH2)12CH.O.CO. Using the same method, A. and K. isolated from Icelandic moss of Tateyama province a compound (I), m. 121-2°, [α]D15 -32.06°, which did not depress the m. p. of l-lichesteric acid, C19H32O4, m. 124°, isolated from Icelandic moss of Nikko. I with 10% NaOH on the water bath for 2 hrs. gave lichesteric acid, m. 83-4°, which did not depress the m. p. of the lichesteric acid obtained from Icelandic moss of Nikko. A mixture of equal quantities of l- and d-protolichesteric acid (m. 107°) obtained from the European Icelandic moss, m. 100-1, [α]D10 ±0°.
IT 493-47-0P
RL: SPN (Synthetic preparation); PRP (Properties); PREP (Preparation)
(Constituents of Icelandic moss. II)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)

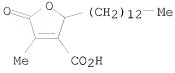


IT 22800-25-5P, Lichesterinic acid, l-
RL: PREP (Preparation)
(preparation of)
RN 22800-25-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2S)- (CA INDEX NAME)

Absolute stereochemistry.

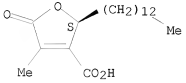


L3 ANSWER 53 OF 53 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1928:37595 CAPLUS
DOCUMENT NUMBER: 22:37595
ORIGINAL REFERENCE NO.: 22:4470g-i,4471a-c
TITLE: Constitution of protolichestearic acid. I
AUTHOR(S): Asahina, Y.; Asano, M.
CORPORATE SOURCE: Tokyo Imp. Univ.
SOURCE: Yakugaku Zasshi (1927), No. 539, 1-17
CODEN: YKKZAJ; ISSN: 0031-6903
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB By Et2O extraction of Cetraria islandica Ach. f. anguslifolia, Kraplh., a subalpine moss in Japan, l-protolichestearic acid (I), C19H32O4, m. 105°, [α]D27 -12.7l°, was isolated in 1.3% yield. It is the optical antipode of the d-acid found in European lichens. I, H2 and Pt black gave dihydroprotolicheslearic acid, C19H34O4, m. 101°. I and H2NCONHNH2 gave the semicarbazone, m. about 140°. These reactions indicate the presence of a double bond in α,β-position to the CO group. Oxidation of I with KMnO4 gave myristic acid, while the oxidation with O3 and subsequent decomposition with H2O gave besides HCO2H and (CO2H)2, α-hydroxypentadecylic acid, C14H28(OH)CO2H. Heating of I with Ac2O resulted in an isometic change and gave l-lichestearic acid (II), C19H32O4, m. 124°, [α]D25 -32.66°. Heating of II with 10% KOH gave with CO2 evolution, lichesteryl acid (III), C18H34O3, m. 83-4°. III has previously been prepared by Sinnhold (Ann. 55, 144), but the nature of the third O atom remained unexplained. Heating of the oxime of III with H2SO4 resulted in Beckmann rearrangement and gave an acid amide (IV) C18H35(NO3), m. 102°. IV and concentrated HBr in a closed tube gave tridecylamine and methylsuccinic acid. The above reactions show that III has 2 possible structures RCOCH2CHMeCO2H or RCOCHMeCH2CO2H(R = Me(CH2)12-). Heating of II in a vacuum at 20 mm. and 210° gave lichesteryl lactone (V), b. 207°, which on saponification with KOH gave III. V, H2 and Pd-BaSO4 gave the dihydro derivative of V, m. 37-8°, while V, O3 and H2O gave AcOH as a decomposition product. Contrary to the view of Boehm (Arch. Pharm. 241, 1) V is therefore unsatd. The above reactions show that the relation of III to V is like that of levulinic acid to angelic lactone. Hence V has one of the following 4 possible structures: (a) R-CH.CH:CMe.CO.O, (b) R-C:CH.CHMe.CO.O, (c) RCH.CMe:CH.CO.O, (d) RC:C.Me.CH2.CO.O. But the fact that the ozonide of V gave AcOH instead of (CO2H)2 favors the structure (a) for V, while III should have the structure, RCOCH2CH(Me)CO2H. I, therefore, has one of the 2 possible structures, RCH.CH(CO2H).C(:CH2)CO.O or RCH.C(CO2H):CMe.CO.O. Since the ozonide of I gave HCO2H and (CO2H)2 instead of AcOH, the former structure is preferred. From the fact that I did not give III, but II gave III by saponification with an alkali, the following
structure is assigned for III.
IT 493-47-0P
RL: SPN (Synthetic preparation); PRP (Properties); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(Constitution of protolichestearic acid. I)
RN 493-47-0 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl- (CA INDEX NAME)



IT 22800-25-5P, Lichesterinic acid, 1-
RL: PREP (Preparation)
(preparation of)
RN 22800-25-5 CAPLUS
CN 3-Furancarboxylic acid, 2,5-dihydro-4-methyl-5-oxo-2-tridecyl-, (2S)- (CA INDEX NAME)

Absolute stereochemistry.



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